

EXHIBIT 2

(Redacted)

(Previously Filed Under Seal as DI 365-1)

UNITED STATES DISTRICT COURT
DISTRICT OF MINNESOTA

FAIR ISAAC CORPORATION, a)	Case No. 16-cv-1054 (WMW/DTS)
Delaware corporation,)	
)	
Plaintiff,)	
)	
v.)	Jury Trial Demanded
)	
FEDERAL INSURANCE COMPANY,)	
an Indiana corporation, and ACE)	
AMERICAN INSURANCE)	
COMPANY, a Pennsylvania)	
corporation,)	
)	
Defendants.)	

EXPERT REPORT OF R. BICKLEY (BICK) WHITENER

April 19, 2019

CONFIDENTIAL—ATTORNEYS' EYES ONLY

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I. INTRODUCTION

1. I was retained by Plaintiff Fair Isaac Corporation (“FICO”) to provide expert witness consulting services and trial testimony with respect to the insurance industry and the role of decision management software in that industry. More specifically, I was asked to opine on the contribution to gross written premium made by the FICO® Blaze Advisor® decision rules management system (“Blaze Advisor”), which was incorporated into applications deployed by Federal Insurance Company (“Federal”) and ACE American Insurance Company (“ACE American”) (collectively “Defendants”).

II. QUALIFICATIONS AND INFORMATION CONSIDERED

A. Expert Witness Experience

2. I have been employed with Bickley & Company, L.L.C. for almost five years. I have not served as an expert in any litigation. I was deposed once while an employee of The Hartford. This information and my Curriculum Vitae are attached as Appendix 4.

B. Compensation

3. I am being compensated for my time on this case at the rate of \$200 per hour, including research, preparation of this report, deposition and trial. My compensation is not affected in any way by the conclusions in this report or the outcome of this lawsuit.

C. Information Considered

4. My opinions are based on my skills, knowledge, experience, education, and training in the insurance and insurance technology industries, as well as information gathered by and/or provided to me as of the date of this report. I have relied upon publicly available information, industry white papers, and internet resources. I have considered documents produced by both parties as well as other case-specific facts as listed in Appendix 5. It is usual and customary for experts in my field to consider and/or rely upon sources of information such as those identified above and in Appendix 5 in forming the opinions contained herein.

5. In addition, I have had discussions with the following individuals:

- Bill Waid on November 12, 2018

6. My opinions are limited to those set forth in this report. However, I reserve the right to submit additional thoughts, comments, and material in support of my opinions on these topics, including by deposition testimony. I also reserve the right to rely on any exhibits or testimony cited at trial. I reserve all rights to utilize anything cited herein or

cited in response by Federal or ACE American as a basis for my opinions or as a demonstrative at trial.

7. I understand that I may be asked to testify with respect to my opinions contained herein as well as to related matters, including those raised on cross-examination. I expect to further elaborate and expand on the content of my report as necessary to make my testimony understandable to the Court. To the extent helpful to explain or put in context the subject matters discussed throughout my report, I also expect to provide further general explanation of matters I discuss. In connection with any testimony, I may rely on materials referenced in this report and its attachments as well as demonstrative exhibits to be prepared and identified before my testimony. I may further rely upon exhibits cited or relied upon by FICO, or anything raised or relied upon in Federal or ACE American's rebuttal reports, or FICO's reply reports.

8. I understand expert discovery in this matter is ongoing and other new information may become available prior to trial. I will be prepared to supplement my opinions in the event that any new facts become known to me prior to or during trial that may impact my opinions and bases for those opinions. I am aware of my continuing obligation to do so under Rule 26 of the Federal Rules of Civil Procedure.

III. EDUCATION AND EXPERIENCE IN THE INSURANCE INDUSTRY

9. Over the course of 40 plus years of employment, I have worked in many parts of the insurance industry, including underwriting, financial management, planning, product development, product management, general (field operations) management, and business management of technology. On October 24, 1977, I started my career in the property and casualty ("P&C") insurance industry when I started at The Hartford as a Personal Lines On-Job Trainee in its underwriting training program. I completed the program and was moved into a permanent underwriting position. In July 1978, I was transferred to an underwriting position in the Personal Lines Department of the Washington, DC, Regional Office.

10. Later in 1978, I was promoted to The Hartford's corporate planning department, which oversaw all market segments, lines of business, and functional departments: Personal Lines, Commercial Casualty, Commercial Property, Specialty, and approximately 15 other lines of business. I was responsible for merging the plans and budgets from the Hartford's Life Insurance entity with those of the P&C Insurance entity to create an overall corporate plan that was delivered to The Hartford's parent at the time, ITT. I worked closely with The Hartford's corporate accounting department to merge the financials of the two entities (P&C and Life) for the consolidated plan.

11. I returned to Personal Lines in 1982 to lead the development of a new product—a combined Homeowners and Personal Auto Policy. This included filing necessary rates, rules, and forms with each target state's Department of Insurance;

developing a system support for this new policy; and managing the department's Rates, Rules, & Forms manuals unit, priority projects, and the use of IT programming resources.

12. I was then promoted to the The Hartford's executive ranks as a Director. I aided The Hartford's implementation of Equifax's C.L.U.E. (Comprehensive Loss Underwriting Exchange), including quantifying and writing the cost benefit analysis of C.L.U.E. for The Hartford. Next, in early 1992, I moved to Charlotte, NC to lead the re-engineering of the regional service center, which was responsible for underwriting and operations for approximately 10 states in the Southeast United States.

13. Upon completion of the re-engineering effort, I left the Hartford and joined Equifax Insurance Services as its AVP of Property Products in mid-1993. At Equifax, I worked with the Equifax IT department and with Equifax P&C insurance clients helping underwriting departments understand the value of electronic access to the Equifax products for the underwriting processes including rating/pricing.

14. In 1996, I joined Prudential P&C Insurance company as its Director of Information Systems. My responsibility in this position was to help Prudential select a vendor policy administration system to replace its existing Cobol, flat data file system.

15. I took a sabbatical year in 1997-1998 and worked for the American Red Cross. Then, in 1998, I became a Product Manager for a mid-size Personal Auto insurance company. During my time with this company, I moved from being a Product Manager to a Product Management Team Lead, to AVP of the Product Management Department. I assisted and oversaw the development and implementation of the first guaranteed point of sale product offered by a personal auto company.

16. From there, I took a position as the VP of Homeowners for a business process outsourcer in Kalispell, MT. The business process outsourcer's primary service offering was processing flood insurance policies through the Federal NFIP's (National Flood Insurance Program) "Write Your Own" program.

17. In 2004, I accepted a position as the Director of Project Management for a mid-size P&C insurance carrier writing primarily non-standard personal property. This company had six policy administration systems and seven claims systems because it had grown through acquisitions but had never dealt with the obvious redundancy in systems. The company needed a business leader to help select vendor applications for policy administration system, billing, and claims, and to lead the implementation of the chosen solution(s). I led this effort for almost two years.

18. Next, twenty-two months later, I accepted a position to become General Manager of the Mid-West division of a mid-size P&C Personal Auto insurance company. This position was unusual in that the position had both product management and sales responsibilities.

19. In 2009, I went to work for a small technology services company that sold implementation services of vendor policy administration systems to P&C insurance companies. I was initially the Director of Business Development, and then became the VP of Marketing a year later. I worked with project teams, including off-shore teams, helping them better understand P&C insurance. I was also principal consultant to a policy administration system software vendor to perform software assessments.

20. I opened Bickley & Company, L.L.C. in 2014 to offer consulting in the insurance and technology space. Over the past five years, I have serviced four clients. For the first client, I was the Business Systems Architect to help prepare a system imported from Europe to service the US insurance market space. I was originally engaged on that project to write business requirements for identified gaps in the vendor software when compared to the business needs. Then, I took on added responsibilities for the software vendor. The second client was a start-up Managing General Agency, which I helped launch from scratch using a vendor software suite for policy administration, billing, and claims. I functioned as the temporary Chief Operating Officer and worked with a selected vendor to operationalize the vendor software systems components. My third client was a P&C insurance company, for whom I assessed its existing systems and IT department. For the fourth client, I led the re-engineering of a P&C insurance company's forms management process and policy forms.

IV. FICO'S BLAZE ADVISOR® DECISION MANAGEMENT SOFTWARE

21. Making smart, data-driven decisions is critical to the way P&C insurance companies do business today.

“Insurance is a decision business. Competitive success depends on making smarter decisions than the other guy. Traditionally insurers have relied on written procedures, training and hard-coded mainframe programs for consistency, and on actuaries, underwriters and adjusters to make the right decisions. But as change becomes more frequent and decisions more complex, insurers need a better solution.”¹






22. FICO is the leader in the design and development of predictive analytics and decision management software.² “FICO® Blaze Advisor® is the world's leading business rules management system for maximizing control over high-volume operational decisions. Blaze Advisor provides companies across industries with a scalable solution

¹ FICO0057207 at FICO0057208 (quoting Donald Light, Director, North America Property Casualty practice for Celent. L.L.C., a research and advisory firm focused on financial institutions including insurance companies).

² FICO0002036.

that delivers unprecedented agility and actionability for smarter business decisions.”³ Clients in the insurance industry use Blaze Advisor to design, develop, execute, and maintain rules-based business applications, which allows companies to increase the precision, consistency, and agility of high-volume operational decisions while reducing the time and cost to make those decisions.⁴

23. Blaze Advisor improves, automates, and connects organizational decisions to enhance business performance through the application of key technologies.⁵ Blaze Advisor improves a company’s decision making, and thereby improves the revenue, in five key ways:⁶

DIMENSIONS OF DECISION MANAGEMENT	
	Precision: accurate predictions permit more accurate actions and treatments allowing better management of risk, costs, losses, etc.
	Consistency: consistent decisions and customer treatment, driving a consistent customer experience regardless of contact or request
	Agility: flexible decisions and processes enables faster responses to changes in customer behavior, economic drivers, competition, regulation
	Speed: at the core of improvements in automated processes is the need to make decisions in real time
	Cost: control of decision unit and business costs improves overall business performance driving profitability

24. FICO’s penetration into the P&C insurance industry market space is due, in part, to acceptance of data-driven analysis. Data-driven analysis is applied to insurance processes such as underwriting, claims adjudication, and renewals. Decision Management software such as Blaze Advisor automate, improve, and connect decisions across an enterprise enabling better decisions.⁷ In its Business Rules Strategy/Roadmap presentation, Chubb identified numerous reasons why a company would strive for better, faster decisions and would adopt decision management software such as Blaze Advisor to achieve that goal:⁸

³ “FICO Blaze Advisor 7.1 Gives Business Users Unprecedented Power to Manage Their Own Business Rules,” October 15, 2012 <https://www.fico.com/en/newsroom/fico-blaze-advisor-71-gives-business-users-unprecedented-power-to-manage-their-own-business-rules-10-15-2012>.

⁴ FED000270_0012; *see also* FED000112_0012; FED000275_0004.

⁵ FED000270_0012.

⁶ *Id.*

⁷ FED000275_0004.

⁸ FED000275_0005.

Reasons for Adoption

- Reduce the **time and cost** involved in developing decision applications
- Enable decision logic to be **reused** by multiple applications
- Enable advanced decisioning to be **added to legacy systems** as services, minimizing cost and technical risk, leveraging IT investment
- Cut **operational costs and cycle times** through automation
- **Elevate all decision making** to the level of the organization top expert
- **Enforce consistency and compliance** across channels and contact points
- Increase business control and understanding by enabling managers to see in one place all the **rules contributing to a decision**

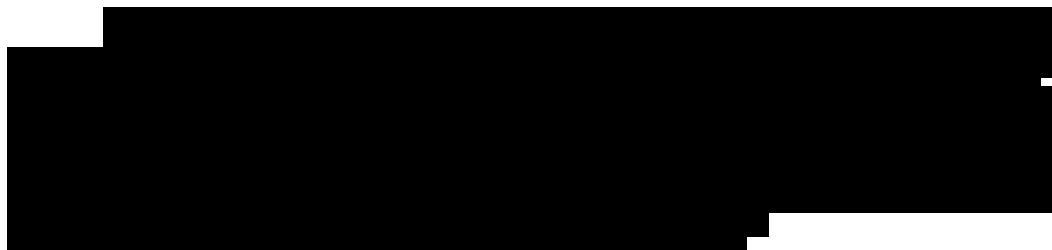


Chubb Insurance Company of America, Columbus, Ohio

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25. Blaze Advisor helps insurance companies automate business rules (for agility, speed, consistency, and compliance),⁹ manage their customer life-cycle,¹⁰ and allows business users, instead of technology associates, to modify rules.

26. FICO's clients have implemented Blaze Advisor in various ways to grow their revenues and businesses:

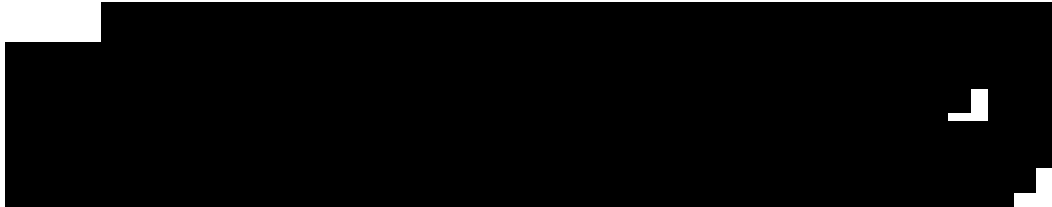
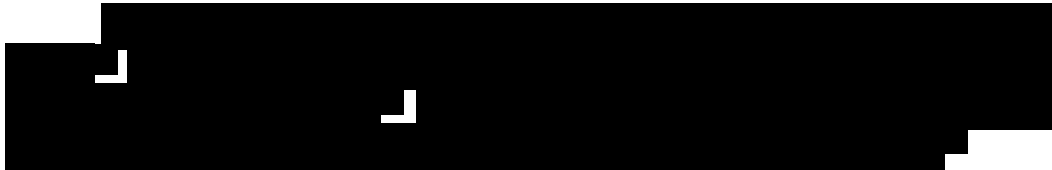


⁹ FED000252_0005.

¹⁰ FICO0005318 at FICO0005320.

¹¹ FED008760_0001.

¹² FED005190_0009.



27. Blaze Advisor can help a company grow top-line revenue by, among other things, automating decision making and by increasing consistency in performance.¹⁸

V. BLAZE ADVISOR'S CONTRIBUTION TO GROSS WRITTEN PREMIUM

28. Chubb used the Blaze Advisor software in several strategic areas of its business, including in the following applications:

- 1) CSI eXPRESS – used by Chubb Specialty Insurance. The application is the policy administration system facilitating the quote, bind, book, issue functions for all new and renewal specialty line policies;

¹³ FICO0002058 at FICO0002085.

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ *Id.* at FICO0002089.

¹⁷ *Id.*

¹⁸ Blaze Advisor® also contributes to bottom-line revenue by reducing costs by helping companies underwrite better policies (i.e. assist underwriters in predicting the future behavior of current and potential customers to reduce likelihood of lost claims dollars). *See* FED000275_0013. FICO's customers have realized cost savings in other forms:

Mutual of Omaha used Blaze Advisor® to implement a new authority management function for the internal and external users of the company's portal.

FED005090_0001. This is a standard security and authorization function needed by all insurance companies at various levels. The function controls access to a company's various systems' capabilities (such as quoting or requesting a payment history) based on the user's id credentials. The Mutual of Omaha Vice President of Enterprise Architecture and Security at the time, George Royce, states: "We would have had to employ additional developers to support and maintain this system were it not for the ease of modification that Blaze Adviser allows. That alone is an annual savings of \$100,000". *Id.* This quote validates that a Blaze Advisor® can contribute to a company's expense management efforts.

- 2) Automated Renewal Processing (“ARP”) – used by Chubb Specialty Insurance. This application reduces the number of Chubb Specialty Insurance policies coming up for renewal that requires human intervention (underwriting associate review);
- 3) Profitability Indicator – used by Chubb Specialty Insurance. This application generates a predictive score of probable profitability that provides the Chubb Specialty Insurance underwriting process an objective data element to consider when taking an application or renewal through the underwriting process;
- 4) CIS Claims – used by Chubb Specialty Insurance. This application is an after the fact use of predictive analytics allowing the Chubb Actuarial associates to provide the Chubb Specialty Insurance Underwriting Department with a hindsight evaluation of issued policies (i.e., whether the price at issuance was adequate or inadequate). This actuarial analysis may impact the underwriting rules used on future applications, including through use of Profitability Indicator;
- 5) DecisionPoint – used by Chubb Specialty Insurance. This application is a browser-based, point-of-sale, system that allows agents to quote, bind, and initiate booking and issuance of a policy for middle and small market sub-segments for four products: Directors & Officers; Employment Practices Liability; Crime; and Fiduciary;
- 6) Premium Booking Modernization – used by Chubb Corporate Business Solutions. This application allows Chubb to more rapidly create the rules that assign policy premium (or portions thereof) to downstream databases and reporting systems;
- 7) Texas Accident Prevention System (“TAPS”) – used by Chubb Commercial Insurance. This application allows Chubb Commercial Insurance to monitor and report on compliance of individual workers’ compensation policies with state of Texas regulations;
- 8) Individual Rate Modification Application (“IRMA”) – This application allows Chubb Commercial Insurance to manage use of individual policy rate modifications to ensure product and corporate requirements and restrictions for rate modifications are not violated;
- 9) Evolution (CAZ) – used by Chubb Canadian Zone. This application is the policy administration system for the Chubb Canadian Zone;

- 10) Evolution (APZ) – used by Chubb’s Asia Pacific Zone. This application is the policy administration system for the Asia Pacific Zone. The application was transferred from the Canadian Zone to Australia in late 2015 or early 2016;
- 11) EZER – used by Chubb European Zone for a suite of Executive Risk products. This application is the policy administration system for Chubb European Zone;
- 12) ADAPT (UK) – used by Chubb Accident and Health. This application is a browser-based policy administration system used in the U.K. and other European countries;
- 13) ADAPT (APZ) – used by Chubb Accident and Health. This application is a browser-based policy administration system used in Australia and other Asian countries;
- 14) Commercial Underwriting Workstation (“CUW”) – used by Chubb Commercial Insurance. This application is the technology that allows Chubb Commercial Insurance to underwrite its products. Within CUW, Blaze Advisor is used for Inventory Management, which is a function that regulates underwriting work assignment;
- 15) Cornerstone – used by Chubb’s Surety unit. This application is a surety policy administration system that facilitates the quote, bind, book, issue process for Surety products;
- 16) Broker Site – used by Chubb Canadian Zone – This application is an agency portal used to allow agents and brokers to access policy information; and
- 17) Exari – developed by Chubb European Zone. This application was a document authoring software application designed to work with the EZER policy administration system.

29. Automated decision-making with Blaze Advisor enables Chubb to make high-volume operational decisions with speed, increased precision and consistency, and with greater agility – the efficiency of automation – contributing to revenue through scale.¹⁹ Use of Blaze Advisor enables an insurance company to increase the volume and accuracy of transactions in an efficient manner (i.e. without having to increase

¹⁹ FED000270_0012; *see also* FED000112_0012; FED000275_0004.

personnel).²⁰ Blaze Advisor contributes to the increase in volume and accuracy of transactions, which in turn contributes to Chubb revenue, by:

- **Increasing speed of response to quote requests:**²¹ The faster Chubb responds to a request for a quote from an agent or broker, the more likely it is that the insurance company will convert the quote to an active, paid-for policy. The automated decision-making of Blaze Advisor gets quotes to applicants faster. Speed is also captured through selective routing of applications to available underwriters and/or to underwriters with subject matter specialties.²²
- **Increasing speed of making renewal offers:**²³ The faster Chubb delivers a renewal offer to an agent or broker and the policyholder, the more likely it is that the policy will not be shopped to competitors and the policyholder will accept the renewal offer. The automated decision-making of Blaze Advisor allows policies to be reviewed for renewal and renewal offers extended faster.
- **Increasing speed at which new products can be introduced, due to Blaze Advisor's agility:**²⁴ The automated decision-making of Blaze Advisor enables Chubb to bring products to market faster by requiring less effort to author business rules and by allowing for the reuse of previously written rules across multiple products and systems (such as different policy administration systems). Speed-to-market increases a company's product offerings and increases revenue.²⁵
- **Increasing speed at which product changes involving product and underwriting rules can be implemented, due to Blaze Advisor's**

²⁰ FED000270_0016; *see also*. Deposition of Lawrence Wachs 185:3-17.

²¹ FED000270_0012; *see also* FED000112_0012; FED000275_0004.

²² FED016599_0001.

²³ FED000270_0012; *see also* FED000112_0012; FED000275_0004.

²⁴ FED000270_0012; *see also* FED000112_0012; FED000275_0004; "FICO Blaze Advisor 7.1 Gives Business Users Unprecedented Power to Manage Their Own Business Rules," October 15, 2012 <https://www.fico.com/en/newsroom/fico-blaze-advisor-71-gives-business-users-unprecedented-power-to-manage-their-own-business-rules-10-15-2012> ("FICO Blaze Advisor 7.1 gives business users more control. Rules can be authored, approved and deployed faster, which lowers the cost and time to market for rules updates." . . . "The imperative in the business rules marketplace today is greater agility, which has always been one of FICO Blaze Advisor's advantages," said Don Griest, senior director of product management at FICO.").

²⁵ The earlier in a calendar time period an insurance company moves a new product into production so agents and brokers can sell the new product, the more months of new written premium that new product will generate.

agility:²⁶ The automated decision-making of Blaze Advisor enables Chubb to modify or update existing products faster to better capture market opportunities.²⁷ Blaze Advisor also allows Chubb to modify such rules faster, even reusing already existing rules from other products that exist in Blaze Advisor.²⁸ This is another speed-to-market benefit caused by the agility Blaze Advisor affords its users.

- **Increasing speed to market by ensuring compliance with corporate and statutory reporting requirements:**²⁹ Written policies must comply with both internal and external (i.e. statutory) reporting requirements. Delays in confirming that a new policy or renewal meets compliance requirements and delays in developing new products or modifying old products for compliance results in a delay in Chubb's ability to capitalize on a market opportunity. Blaze Advisor improves the agility at which steps to ensure compliance can be completed.
- **Increasing the precision and adequacy of a quote, thereby increasing the probability the quote offer will be accepted (converted to a new business policy):**³⁰ Every independent agent or broker works with multiple

²⁶ FED000275_0005; *see also* "FICO Blaze Advisor 7.1 Gives Business Users Unprecedented Power to Manage Their Own Business Rules," October 15, 2012 <https://www.fico.com/en/newsroom/fico-blaze-advisor-71-gives-business-users-unprecedented-power-to-manage-their-own-business-rules-10-15-2012> ("FICO Blaze Advisor 7.1 gives business users more control. Rules can be authored, approved and deployed faster, which lowers the cost and time to market for rules updates." . . . "The imperative in the business rules marketplace today is greater agility, which has always been one of FICO Blaze Advisor's advantages," said Don Griest, senior director of product management at FICO.").

²⁷ The earlier in a calendar period an insurance company moves a product change or a change in underwriting rules into production to influence existing products being sold by the agents and brokers, the more months of influence of written premium these changes will generate.

²⁸ FED000122_0026; *see also* Deposition of Lawrence Wachs 188:25-189:15 ("You're able to modify the book of business on the fly by businesspeople rather than technologists. You don't have to suffer the standard queue online waiting for the IT folk to make changes because the businesspeople are able to make their changes with the software in English language without having to do coding, that enables them to change things, to run AB Analysis examining different groups, changing the rules, and they can -- seeing the results of those rules. It positively affects the business."); Deposition of Benjamin Baer 32:15 (" . . . so by better understanding your decision logic, why and how you mitigate risk or price a product, by understanding that logic and flow, you could better adapt it to new products, helping speed that new product time to market rather than starting from scratch. Most companies, or many companies, I should say, don't codify their decision-making process and their logic. And like any good process, if you've documented it, you can better leverage it, better improve it, better customize it.").

²⁹ Deposition of Henry Mirolyuz, January 11, 2019 63:9-16.

³⁰ FED000270_0012; *see also* FED000112_0012; FED000275_0004.

insurance companies. The price for coverage offered by any insurance company must at least cover the probable loss dollars represented by the risk exposure. Imprecisely pricing the risk exposure as too low results in the loss of money. Imprecisely pricing too high results in the loss of the opportunity to write the policy. Precisely price and the insurance company greatly increases the probability it will write the risk. Blaze Advisor improves Chubb's ability to precisely quote terms of a new business policy, including price.

- **Increasing the precision and adequacy of a renewal offer, thereby increasing the probability the renewal offer will be accepted:**³¹ Blaze Advisor improves Chubb's ability to precisely price a renewal offer. If the renewal offer is imprecisely priced, there is negative impact to the insurance company offering the renewal: too low, lose money; too high, likely lose the renewal to a competitor. Only a precise, adequate price allows the insurance company to keep the renewal on its books profitably.
- **Increasing the ease of use for agents and brokers by:**³²
 - **Reducing time an agent or broker spends with an application, thereby increasing the chance he or she will come to Chubb with the next application:**³³ Insurance agents and brokers value their time just as insurance company underwriting associates do. An agent or broker generally prefers to send prospective policy applications to insurance companies who require less work on the part of the agent or broker. Blaze Advisor allows Chubb to reduce the amount of work an agent or broker does on an application before submitting it to Chubb.
 - **Reducing the time an underwriter spends on an application, thereby increasing the availability of the underwriting associates to the agents:**³⁴ Underwriting associates place great value on their time. The more underwriting time required for transactional processing, the less underwriting time available for relationship management or selling and marketing the insurance company to agents and brokers.³⁵ Agents and brokers prefer to work with insurance companies whose underwriting associates have time to spend helping the agent or broker deal with day-to-day opportunities

³¹ FED000270_0012; *see also* FED005204_0010.

³² FED011560_0028.

³³ FED011560_0015.

³⁴ FED010861_0004.

³⁵ FICO057208 at FICO057212.

or issues. The automated decision-making of Blaze Advisor takes many transactional decisions out of the hands of Chubb's underwriting associates thereby freeing that time up for interaction with the agents or brokers.

- **Improving the accuracy of data used in the underwriting process leading to a more precise, adequate premium offer:**³⁶ By using decision management technology to drive the acquisition of third-party data, accuracy of the data is improved leading to more precise pricing and a better work experience for the agent or broker. Agents and brokers prefer to send prospective policy applications to insurance companies who have better acquisition of data practices. Blaze Advisor improves Chubb's data acquisition practices and improves the accuracy of data available in the underwriting process.

VI. CHUBB & SON, A DIVISION OF FEDERAL INSURANCE CO., LICENSED BLAZE ADVISOR TO AID ITS EXPANSION TO UNDER PENETRATED SPECIALTY MARKETS

30. In 2006, Chubb & Son, a division of Federal Insurance Co., sought to expand its market presence into the mid- and small-market specialty lines.³⁷ Recognizing that it needed automated decision-making technology to accomplish that expansion. Chubb & Son published its Request for Information (RFI), dated February 3, 2006:

“Chubb Specialty Insurance gets the majority of its revenue, typically achieved via premiums, from a relatively small number of very large accounts. They have approximately 1000 employees in this line of business driving \$3.5B in revenue. The key strategic initiative in this area is expanding and growing the business into middle-market and smaller accounts.”³⁸

The RFI goes on to say:

“There is an initiative to move work to service centers so CSR's/Underwriters can focus more time on marketing and selling to these agents and agencies. Movement to mid-market and smaller accounts has proven to be difficult, as this requires the team and systems to handle an increased volume of work (more transactions, policies, claims, etc.) in an

³⁶ FED008352_0001.

³⁷ FICO0057280 at FICO0057284.

³⁸ FICO0057280 at FICO0057284.

environment where Chubb's current "Expense Management Strategy" does not allow for increases in staffing."³⁹

31. By expanding in the small and middle-sized accounts, Chubb expected an order of magnitude increase in the number of items that it would have to review and underwrite.⁴⁰ Chubb did not have the budget for the staff that would be necessary to underwrite the new accounts in its current processing manner.⁴¹ Consequently, Chubb needed automated decision management software that would allow Chubb to scale its business so it could take on the new revenue streams.⁴²

32. Thus, Chubb embarked on a search for a technology that would enable it to automate its underwriting to handle the increase in transactional volume without addition of incremental staff. FICO responded to the RFI and Chubb eventually selected Blaze Advisor as the decision management technology it would use to facilitate its market expansion. Chubb & Son, a division of Federal Insurance Co., and FICO signed a Blaze Advisor license agreement in June of 2006.

VII. CHUBB'S USE OF BLAZE ADVISOR CONTRIBUTES TO GROSS WRITTEN PREMIUM

33. Blaze Advisor is used in the following applications to contribute to the gross written premium generated from the issuance of insurance products:

A. Policy Administration Systems Using Blaze Advisor

(1) CSI eXPRESS

34. CSI eXPRESS is Chubb Specialty Insurance's⁴³ underwriting and policy administration system.⁴⁴ It supports all lines of business and handles all active products (113) for Chubb Specialty Insurance in the United States and Canada.⁴⁵ It operates on both a java and .net platform.⁴⁶ CSI eXPRESS handles the quote, bind, and issue of all new lines and renewals within the Chubb Specialty Insurance.⁴⁷ The quote, bind, book, issue process is the process through which a P&C insurance carrier creates written

³⁹ *Id.*

⁴⁰ Deposition of Lawrence Wachs 185:3-8.

⁴¹ *Id.* 185:8-12.

⁴² *Id.* 185:12-17; *see also* Fed000270_0016.

⁴³ Post-merger, this unit is known as the Financial Lines Unit. *See* Federal Insurance Company's Fifth Supplemental Answer to Interrogatory No. 16 and Sixth Supplemental Answer to Plaintiff's Interrogatory No. 17, at 11.

⁴⁴ FED004571.

⁴⁵ *Id.*; FED009631.

⁴⁶ FED001020.

⁴⁷ FED009631.

premium in both the new business and renewal transactions (there is a minor benefit from the endorsement transaction but not enough to warrant use of that transaction process in this report). It is the means by which insurance policies are sold.

35. The CSI eXPRESS application predated Chubb's use of Blaze Advisor.⁴⁸ Chubb's licensing of Blaze Advisor was intended to and indeed did enhance the CSI eXPRESS application to better support Chubb's small/medium market product flexibility and configuration and to conform with Chubb's Small Business Platform.⁴⁹ Indeed, Chubb's purpose in selecting Blaze Advisor was to assist in expanding and growing the business in the mid-market.⁵⁰ The redesign was conducted to deliver better performance and consistent profitability across all market cycles and to make it easier to do business with Chubb Specialty Insurance, both internally and externally.⁵¹ CSI eXPRESS integrates efficient underwriting, speed of response, and greater ease of doing business for Chubb's agents.⁵² CSI eXPRESS, using Blaze Advisor, is the engine driving Chubb's pursuit of the mid-market specialty sub-segment.

36. CSI eXPRESS's use of Blaze Advisor contributes to revenue by increasing the speed of response to a request for a quote and the speed of making renewal offers. In addition, it helps the underwriting process achieve a precise, adequate price, increasing the probability the quote will be accepted. This results in an increased quote conversion rate. The application also helps with ease of use for agents and brokers through better data capture and use of third-party data sources. This, in turn, reduces the need to ask the applicant for more data and improves the cost of doing business and the accuracy of data used in the underwriting process, which, in turn, results in a more precise, adequate premium calculation.

37. The use of Blaze Advisor within CSI eXPRESS improves availability of underwriting associates to agents by reducing the amount of time an underwriting associate needs to spend in the quote, bind, book, issue process. A reduction in time required for the quote, bind, book, issue process allows Chubb to redeploy this underwriting time to other higher-value activities such as marketing and selling Chubb as a premier international insurance company. The reduction in time opens the opportunity for the underwriting associates to handle other, more profitable, transactional work.

38. The use of Blaze Advisor within CSI eXPRESS also improves Chubb's product agility and business control. Chubb is positioned to respond rapidly to regulatory requirements for the product suite and to execute the periodic product review and update

⁴⁸ FICO0057280 at FICO0057285 (RFI).

⁴⁹ *Id.*; FED012130_0009.

⁵⁰ FICO0057280 at 57285-86.

⁵¹ FED011560_0027-28.

⁵² *Id.*

process each insurance company uses to keep all products' rates, rules, and forms both competitive and compliant.

(2) **Evolution**

39. Evolution is a policy administration system developed and used by Chubb in Canada.⁵³ It operates on both a java and .net platform.⁵⁴ Evolution supports the entire policy administration life cycle.⁵⁵ Evolution is used both internally and externally since the user interface doubles as a market-facing portal.⁵⁶ Unique from other Chubb policy administration systems, Evolution supports all strategic business units in Canada and products from the Chubb Personal Insurance (CPI), Chubb Commercial Insurance (CCI), and Chubb Specialty Insurance (CSI).⁵⁷ Evolution also facilitates business at all touch points—low, medium, and high touch business.⁵⁸

⁵³ FED004571; Deposition of Henry Mirollyuz, January 11, 2019 69:20-21.

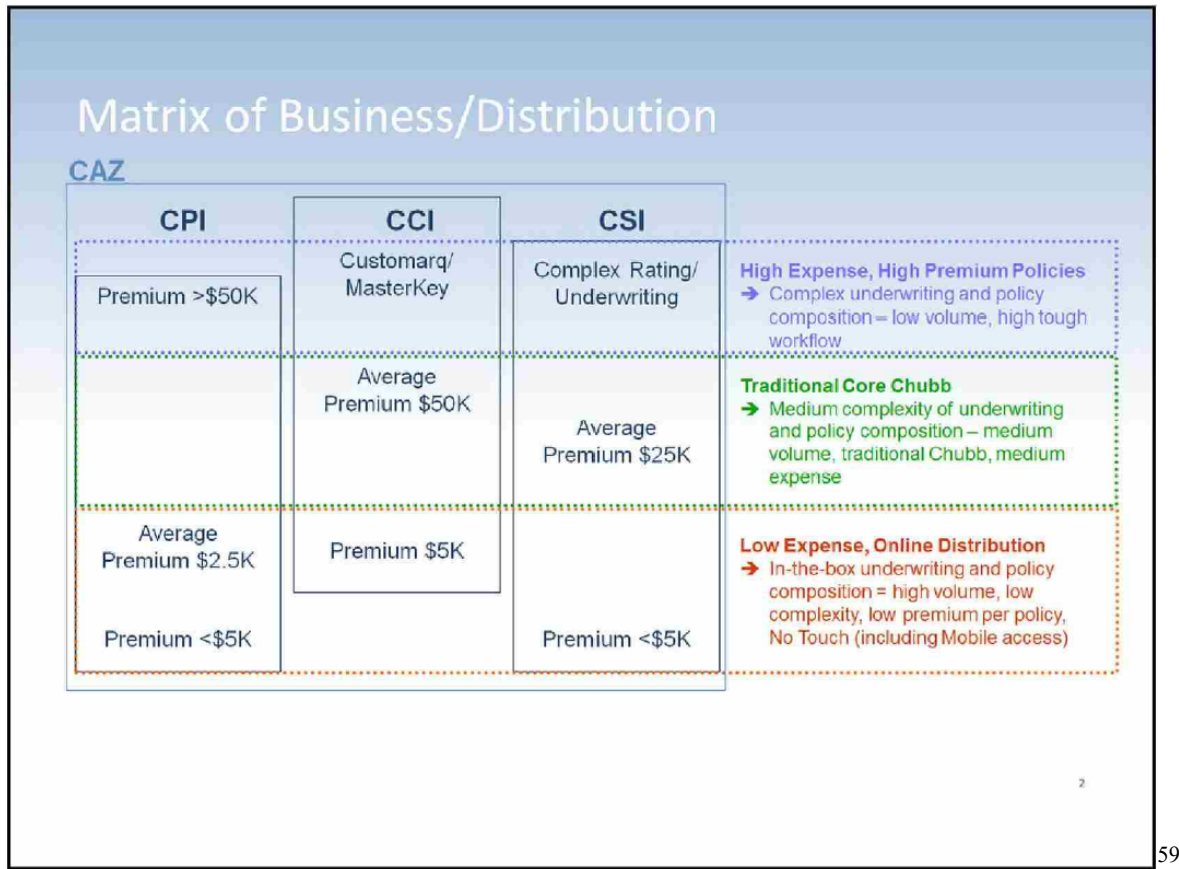
⁵⁴ FED001311_0020; FED001020.

⁵⁵ FED003989_0004-5.

⁵⁶ FED003989_0004.

⁵⁷ *Id.*

⁵⁸ *Id.*



40. Evolution was developed to replace Chubb Canada's aging and outdated policy administration system called Renaissance.⁶⁰ Evolution was implemented to 1) improve productivity in underwriting to create the capacity for growth; 2) automate operational tasks to enable redeployment of resources; 3) improve the quality and timeliness of policy delivery to better service brokers and clients; 4) improve risk management; and 5) reduce IT maintenance costs through shared costs across strategic business units and geographies.⁶¹

41. Evolution was designed to accommodate multiple languages, multiple currencies, and multiple regulatory sets.⁶² After developing it for Canada, Chubb sought to capitalize on Evolution's flexibility and to implement it in Australia.⁶³ In or around

⁵⁹ FED003989_0002.

⁶⁰ FED001311_0007; FED003339_0002.

⁶¹ FED003989_0003.

⁶² FED003989_0004.

⁶³ FED013755_0005; FED003989_0009-12.

January 2016, Chubb Canada distributed Evolution's code to Australia.⁶⁴ Australia implemented Blaze Advisor as part of its Evolution program.⁶⁵

42. Evolution uses Blaze Advisor to provide underwriting guidance.⁶⁶ Evolution, using Blaze Advisor, contributes to revenue by increasing the speed of response to a request for a quote and the speed of making renewal offers. In addition, it helps the underwriting process achieve a precise, adequate price, increasing the probability the quote will be accepted. This results in an increased quote conversion rate. The application also helps with ease of use for agents and brokers through better data capture and use of third-party data sources. This, in turn, reduces the need to ask the applicant for more data and improves the cost of doing business and the accuracy of data used in the underwriting process, which, in turn, results in a more precise, adequate premium calculation.

43. The use of Blaze Advisor within Evolution improves availability of underwriting associates to agents by reducing the amount of time an underwriting associate needs to spend in the quote, bind, book, issue process. A reduction in time required for the quote, bind, book, issue process allows Chubb to redeploy this underwriting time to other higher-value activities such as marketing and selling Chubb as a premier international insurance company. The reduction in time opens the opportunity for the underwriting associates to handle other, more profitable, transactional work.

(3) EZER

44. EZER (European Zone Executive Risk⁶⁷) is an underwriting workstation and policy administration system that supports the complete end-to-end policy life cycle for all Chubb Commercial Insurance and Chubb Specialty Insurance business in Chubb's European Zone.⁶⁸ EZER supports Chubb's property and casualty business and financial lines business in 13 European countries.⁶⁹ EZER supports the following underwriting processes: quotation, binding, renewal, endorsement, cancellation, reinstatement document generation (sending documents and reports to brokers over email), and Reporting.⁷⁰

45. EZER uses Blaze Advisor to enable renewal policy categorization (i.e. whether a policy meets requirements for automated renewal).⁷¹ EZER, using Blaze

⁶⁴ FED001289; FED009894;

⁶⁵ Depo. Ex. 158 (FED010034); Depo. Ex. 154 (FED014158); Deposition of Henry Mirolyuz, January 11, 2019 20:8-15.

⁶⁶ FED017914_0001.

⁶⁷ FED016469_0004.

⁶⁸ FED004571; Deposition of Henry Mirolyuz, January 11, 2019 66:19-20.

⁶⁹ FED016469_0005.

⁷⁰ *Id.*

⁷¹ FED017914_0001.

Advisor, contributes to revenue by increasing the speed of making renewal offers. In addition, it helps the underwriting process achieve a precise, adequate price, increasing the probability the renewal offer will be accepted.

46. The use of Blaze Advisor within EZER improves availability of underwriting associates to agents by reducing the amount of time an underwriting associate needs to spend in the quote, bind, book, issue process. A reduction in time required for the quote, bind, book, issue process allows Chubb to redeploy this underwriting time to other higher-value activities such as marketing and selling Chubb as a premier international insurance company. The reduction in time opens the opportunity for the underwriting associates to handle other, more profitable, transactional work.

(4) ADAPT

47. ADAPT is a browser-based policy administration system with external broker-facing capabilities.⁷² ADAPT allows for real-time binding and issuance of policies with back-end administration, automation, document generation, and electronic filing.⁷³ ADAPT also enables a broker to view and manage his or her own portfolio.⁷⁴ ADAPT, using Blaze Advisor, contributes to speed of response and ease of doing business through these external broker-facing capabilities. This speed of response and ease of doing business in turn positively influence the opportunity to increase quote volume, which leads to more accepted quotes and more gross written premium.

48. ADAPT is utilized in the United Kingdom, Australia, and other European and Asia Pacific countries.⁷⁵ ADAPT is used for the Chubb Accident and Health line of business.

49. ADAPT uses Blaze Advisor to provide underwriting guidance.⁷⁶ ADAPT, using Blaze Advisor, contributes to revenue by increasing the speed of response to a request for a quote. In addition, it helps the underwriting process achieve a precise, adequate price, increasing the probability the quote will be accepted. This results in an increased quote conversion rate. The application also helps with ease of use for agents and brokers through better data capture and use of third-party data sources. This, in turn, reduces the need to ask the applicant for more data and improves the cost of doing business and the accuracy of data used in the underwriting process, which, in turn, results in a more precise, adequate premium calculation.

⁷² FED004571; Deposition of Henry Mirolyuz, January 11, 2019 68:8-22.

⁷³ FED014390_0006.

⁷⁴ *Id.*

⁷⁵ FED014390_0010 (including France, Italy, Germany, Singapore, and Hong Kong); FED013734_0006 (including France, the Netherlands, Germany, and Italy); FED017438_0004 (including Hong Kong).

⁷⁶ FED017914_0001.

50. The use of Blaze Advisor within ADAPT improves availability of underwriting associates to agents by reducing the amount of time an underwriting associate needs to spend in the quote, bind, book, issue process. A reduction in time required for the quote, bind, book, issue process allows Chubb to redeploy this underwriting time to other higher-value activities such as marketing and selling Chubb as a premier international insurance company. The reduction in time opens the opportunity for the underwriting associates to handle other, more profitable, transactional work.

(5) Cornerstone

51. Cornerstone is a solution used for surety bond issuance and maintenance.⁷⁷ Cornerstone was redesigned to improve operational efficiencies and reduce cost.⁷⁸ Chubb found a small portion of its surety customers contributed to roughly 50% of its revenues.⁷⁹ Cornerstone's redesign sought to make it easy for customers to work with Chubb Surety by expanding underwriting resource capacity through process improvement and automation (i.e. increasing scale in efficient manner).⁸⁰

52. Cornerstone, using Blaze Advisor, contributes to revenue by increasing the speed of response to a request for a quote. In addition, it helps the underwriting process achieve a precise, adequate price, increasing the probability a quote or renewal offer will be accepted. This results in increased quote conversion and renewal retention rates. The application also helps with ease of use for agents and brokers through better data capture and use of third-party data sources. This, in turn, reduces the need to ask the applicant for more data and improves the cost of doing business and the accuracy of data used in the underwriting process, which, in turn, results in a more precise, adequate premium calculation.

53. The use of Blaze Advisor within Cornerstone improves availability of underwriting associates to agents by reducing the amount of time an underwriting associate needs to spend in the quote, bind, book, issue process. A reduction in time required for the quote, bind, book, issue process allows Chubb to redeploy this underwriting time to other higher-value activities such as marketing and selling Chubb as a premier international insurance company. The reduction in time opens the opportunity for the underwriting associates to handle other, more profitable, transactional work.

⁷⁷ FED004571.

⁷⁸ FED012128_0006.

⁷⁹ FED007858_0004.

⁸⁰ FED007858_0003; FED011560_0029.

B. Compliance-Related Applications Using Blaze Advisor

(1) Premium Booking

54. The Premium Booking Modernization Program is a compliance solution to ensure that issued premiums comply with Chubb rules and regulations.⁸¹ It ensures that the issued premium is processed and properly recorded.⁸² Booked business must be validated for compliance to Chubb's policy and product rules.⁸³ Premium booking aims to mitigate the time consuming and complicated integration effort that comes with adding new business to the booking system.⁸⁴ Premium Booking opened the way for Chubb to pursue a \$25 million new business opportunity within its Chubb Custom Markets business unit:

Chubb Custom Market (CCM) had the opportunity to increase revenue by \$25 million in new business. In April 2008 a decision was made to build an enterprise booking capability to support CCM's program business platform expansion.⁸⁵

55. Premium Booking opens the door for Chubb to more quickly bring new products to market while ensuring Chubb can report the data for the new products in a timely and accurate manner.

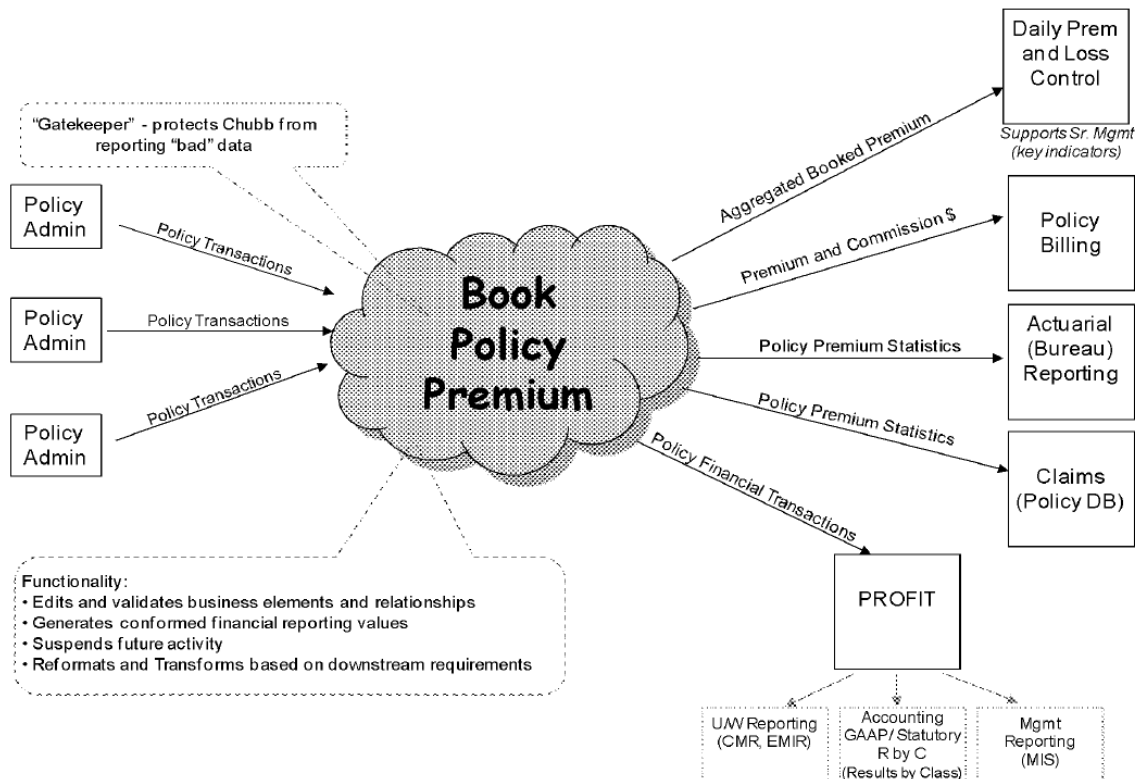
⁸¹ Deposition of Henry Mirolyuz, January 11, 2019 63:12-16.

⁸² Deposition of Henry Mirolyuz, January 11, 2019 64:2-9.

⁸³ FED006784_0005.

⁸⁴ *Id.*; FED006784_0009.

⁸⁵ FED006784_0009.



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56. Premium Booking uses Blaze Advisor to validate rules for Chubb's Premium Activity Recording System.⁸⁷ Premium Booking, using Blaze Advisor, contributes to revenue by increasing the agility of Chubb to introduce new products. Data for new products is required to flow to both statutory and management reporting systems; thus no new product can effectively go to market without product codes being defined and the data transfer to downstream systems implemented. Decision Management software, such as Blaze Advisor, allows more efficient implementation of the necessary movement of data to downstream systems,⁸⁸ and it allows for an increased window of written premium gain (i.e., if the new product would go into production July 1 of a year with the previous technology but can go into production April 1.)

(2) Texas Accident Prevention System (TAPS)

57. The Texas Accident Prevention System (TAPS) solution is a compliance solution for workers' compensation policies sold in the state of Texas.⁸⁹ The state of Texas mandates that accident prevention services are required when the policies meet certain criteria of premium, claims, and other factors.⁹⁰ TAPS ensures that a letter is

⁸⁶ FED016712_0003.

⁸⁷ FED017914_0001.

⁸⁸ FED011560_0035; FED007821_0001; FED016712_0005.

⁸⁹ FED004571.

⁹⁰ *Id.*

generated for certain types of workers' compensation policies after they are issued.⁹¹ Absent compliance with Texas' requirements, relevant insurance policies cannot be issued in the state of Texas.⁹²

58. TAPS, using Blaze Advisor, contributes to revenue by ensuring that each policy written in the Worker's Compensation line of business complies with Texas regulations and that data about any written policy is recorded and reported to recipients of both statutory and management reporting data.⁹³

(3) **Individual Rate Modification Application (IRMA)**

59. The Individual Rate Modification Application (IRMA) is a compliance solution used within Chubb Commercial Insurance's Applied Technology Department to ensure individual rate modifications are applied consistently and that they meet state requirements for justification of the modifications.⁹⁴ IRMA functions to calculate the premium on certain commercial policies.⁹⁵ IRMA is accessed just prior to sending a policy to Premium Booking to implement the final compliance check.⁹⁶

60. IRMA uses Blaze Advisor to ensure proper rate tables and pricing calculations are applied to each policy.⁹⁷ Such rules may include countrywide limits on entered factors (rate modifications), state limits on total factors, required justifications, default justifications, and excluded characteristics.⁹⁸ IRMA was designed to update Chubb's individual rate modification processing, which was not always in compliance for the filed product.⁹⁹ IRMA ensures that for a given policy, all compliance rules for rate modifications and their justifications are adhered to.¹⁰⁰ IRMA, using Blaze Advisor, contributes to revenue by ensuring that any quoted and issued policy is compliant.

C. Other Applications Using Blaze Advisor

(1) **CUW (Commercial Underwriting Workstation)**

61. The Commercial Underwriting Workstation (CUW) is the central platform that supports commercial underwriting and processing throughout the underwriting

⁹¹ Deposition of Henry Mirolyuz, January 11, 2019 62:5-14.

⁹² Deposition of Henry Mirolyuz, January 11, 2019 62:15-18.

⁹³ FED017914_0001.

⁹⁴ FED004571.

⁹⁵ *Id.*; Deposition of Henry Mirolyuz, January 11, 2019 61:1-22.

⁹⁶ FED016653_0004.

⁹⁷ FED017914_0001.

⁹⁸ FED016653_0004.

⁹⁹ *Id.*

¹⁰⁰ *Id.*

lifecycle.¹⁰¹ CUW is vital to Chubb's commercial line of business. If the CUW application is down, Chubb's entire underwriting operations are shut down.¹⁰²

62. CUW is a single point of interface to the most frequently used commercial systems.¹⁰³ The CUW solution is run from local branch application servers on the end user workstation.¹⁰⁴ It enables account and underwriting management, transaction processing, and maintains underwriting file contents¹⁰⁵ (records of the interaction with the customers).¹⁰⁶ CUW is used by over 6,000 users in the United States and Canada from Chubb Commercial Insurance, Chubb Specialty Insurance, Chubb Personal Insurance, (i.e. Signature Solutions), Applied Benefits Life, and Marketing.¹⁰⁷

63. CUW uses Blaze Advisor as part of its Inventory Management function for workflow routing, assignments, and scoring, resulting in [REDACTED].¹⁰⁸ Inventory Management functions as a workload regulator assessing the number of policies assigned to a particular underwriter and raising an alert if the number exceeds a certain threshold.¹⁰⁹ Prior to the implementation of CUW-Inventory Management, when work orders were created in the local branches, the work order was assigned to one of three processing centers based on the originating branch.¹¹⁰ This resulted in peaks and valleys of processing work based on uneven distribution.¹¹¹

64. Inventory Management seeks to remedy this by managing work orders from one countrywide inventory of work orders and directing work orders to a customer service representative with qualifying specialties and skills, and, where possible, to expand the processing day from early Eastern Time to later PacificTime.¹¹² CUW Inventory Management is critical to Chubb's processing of insurance applications.¹¹³ If CUW Inventory Management is inoperable and work orders cannot be created or viewed, then 1) little to no rate/book/issue processing can occur, 2) quoting and issuance is significantly impacted, and 3) there are delays responding to producers.¹¹⁴

¹⁰¹ FED016602_0003.

¹⁰² FED016602_0005.

¹⁰³ FED016590_0001.

¹⁰⁴ FED016590_0001.

¹⁰⁵ FED016602_0003.

¹⁰⁶ FED004571; Deposition of Henry Mirolyuz, January 11, 2019 58:4-12.

¹⁰⁷ FED004571.

¹⁰⁸ FED017914_0001.

¹⁰⁹ *Id.* 58:17-21.

¹¹⁰ FED016599_0001.

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *See* FED016602_0005.

¹¹⁴ FED016602_0005.

65. More simply stated, agents or brokers waiting on Chubb for a response on an application for insurance allows Chubb competitors time to more rapidly respond to the agent or broker and this increases the chance the competitor will write the policy instead of Chubb.¹¹⁵ By placing a risk submitted in the Eastern Time Zone into the hands of a Chubb expert in the Pacific Time Zone, Chubb elongates the day by three hours accelerating the speed at which the Eastern Time Zone agent or broker will have a response. Similarly, placing a risk submitted in the Pacific Time Zone into the hands of a Chubb expert in the Eastern Time Zone, Chubb realizes an extra three hours of processing the next day accelerating the speed at which the Pacific Time Zone agent or broker will have a response. By using a single work queue, Chubb uses Inventory Management, powered by Blaze Advisor, to place the work item into the hands of an available associate with the correct knowledge and skill set to expedite the decision about the work item, improve speed of response, and reach the best possible decision.

66. CUW is the communications vehicle for Chubb Commercial Lines. When it is down, the underwriter's or the agent's ability to move the work item forward comes to a halt thus crippling the quote, bind, book, issue process.¹¹⁶

67. CUW also helps with ease of use for agents and brokers through better communication protocol between the agent and the underwriting associate. This, in turn, reduces the back and forth communications process as the underwriting associate works to obtain the adequate, accurate information needed to properly assess and price the application or renewal. Adequate, accurate information allows the underwriting associate to calculate a precise, adequate premium for the risk which in turn increases the probability of acceptance of the quote or renewal offer.

(2) Automated Renewal Processing (ARP)

68. The renewal portion of an insurance company's book of business carries a better loss ratio.¹¹⁷ Insurance companies place great importance on retaining as many

¹¹⁵ Chubb's use of CUW improves speed and ease of doing business as no agent or broker wants to hear the company tell them a work item (e.g, a new policy application) was hung up in a function, say underwriting, while at the same time, the underwriting department would not want to admit a work item was on someone's desk who had too much to do in a day.

¹¹⁶ FED016602_0005.

¹¹⁷ Cheng-Sheng Peter Wu and Hua Lin, "Large Scale Analysis of Persistency and Renewal Discounts for Property & Casualty Insurance," *Casualty Actuarial Society E-Forum*, Winter 2009, https://www.casact.org/pubs/forum/09wforum/wu_lin.pdf ("Stable and persisting insureds are generally bringing in more profits to insurers, while insureds who frequently switch from one carrier to another are usually poor risks. For example, the research report by Conning indicates that new business loss ratios can vary from 10% higher to more than 30% higher than renewal business, depending on the line of business and underwriting cycle.").

renewal policies as possible as long as a renewal is precisely and adequately priced.¹¹⁸ Having an effective and efficient renewal process is critical to a P&C insurance company's revenue, profits, and growth.

69. ARP was developed because underwriters and specialty underwriter associates were spending too much time manually processing renewals.¹¹⁹ By automating the process of renewals—rate, quote, book, bind, and issue—underwriters were able to focus more time on marketing and selling to the mid/small market agents and agencies.¹²⁰

70. The process within ARP generally follows two paths categorized as ARP I and ARP II.¹²¹ ARP I specifically determines if the policy is eligible for automated renewal processing.¹²² ARP I creates numerous benefits.¹²³ The Chubb Case Study for Automated Renewal I¹²⁴ states the Chubb Objectives/Benefits for ARP I are:

- 1) Move the right business into automated renewal;
- 2) Increase retention of best accounts and more readily identify potentially less profitable accounts;
- 3) Create greater efficiency for underwriters and continued efficiency for agents, who will have fewer policies to handle and fewer questions to address;¹²⁵ and
- 4) Easily update underwriting rules as business needs change.¹²⁶

71. Chubb completed the ARP I phase and achieved its business objectives, including moving the right business into automated renewal and increasing retention of

¹¹⁸ Similarly, in a 2017 white paper titled “Collaborate Across Functions to Acquire with Retention in Mind”, author Sandeep Kharidhi, VP of Product Management, LexisNexis Risk Solutions, states “...the market is different now. The market is static and there's more competition for a smaller pool – so we have to focus on retaining those who are most profitable – it's expensive going out and getting new customers.” Sandeep Kharidhi, “Collaborate Across Functions to Acquire with Retention in Mind,” *LexisNexis Risk Solutions*, October 2017, available at http://images.solutions.lexisnexis.com/Web/LexisNexis/%7B2e279cfa-6ea8-49c4-8ace-2eee20b69881%7D_LXN210_Acquisition_and_Retention_Whitepaper-FINAL.pdf?elqTrackId=3eee525c84f9472ab7daa9f319705469&elqaid=3745&elqat=2.

¹¹⁹ FED010861_0004.

¹²⁰ *Id.*

¹²¹ Deposition of Henry Mirollyuz, January 11, 2019 52:17-23, 53:8-15.

¹²² Deposition of Henry Mirollyuz, January 11, 2019 52:17-23.

¹²³ See FED000152_0003; FED000280_0004; FED013488_0012.

¹²⁴ FED000252_0005.

¹²⁵ Indeed, the underwriters are the salesmen of the insurance world. Deposition of Ramesh Pandey, November 13, 2018 162:1-9.

¹²⁶ FED000152_0003; FED000280_0004.

best accounts.¹²⁷ Implementation of ARP I also reduced the cost of changing renewal rules from 3-6 months of IT work to 2-3 days of IT work.¹²⁸

72. When a policy is determined eligible for automated renewal, ARP II automates the book, bind, issue process for the automated renewal.¹²⁹ ARP II leverages the rule-based renewal profiling of ARP I to enable straight-through processing capabilities for eligible renewals.¹³⁰

73. ARP II functions to enable automated policy renewals (including endorsement generation).¹³¹ ARP II: 1) enables straight-through processing so that over 90% of eligible renewals are issued automatically within 3 years of implementation; 2) frees up key underwriters and underwriter assistants to focus on developing new business in accordance with Chubb's growth strategy, and 3) provides a rules-based, workflow orchestration solution that can be extended to realize straight-through processing for newline submissions as well.¹³² Chubb completed the ARP II phase to achieve the stated benefits.¹³³

74. ARP I uses Blaze Advisor in renewal categorization¹³⁴ (i.e. whether a policy can be automatically renewed without human review). ARP II uses Blaze Advisor in the policy renewal automation process, including endorsement generation.¹³⁵ Use of Blaze Advisor to automate the renewal review process provides three benefits. First, there is a benefit from identifying those renewals that are imprecisely or inadequately priced (this benefit improves the loss ratio by removing imprecisely and inadequately priced policies from the book).

75. Second, there is a benefit from rapidly offering to renew those expiring policies that are precisely and adequately priced (and, therefore, a high priority to retain). Since speed matters, rapidly making the renewal offer increases the probability that the offer will be accepted and the policy retained. Mr. Evan G. Greenberg, Chairman and CEO, Chubb Limited, in the company's 2016 Annual Report speaks to this when he says "In particular, our goal was to retain our customers, which, as I mentioned earlier, we did at or near historically high levels - 92% in our North American large account commercial P&C business, 88% in our middle market commercial business, about 85% with our

¹²⁷ See FED000280_0004.

¹²⁸ *Id.*

¹²⁹ Deposition of Henry Mirolyuz, January 11, 2019 53:8-15.

¹³⁰ FED013488_0012.

¹³¹ FED017914_0001.

¹³² FED013488_0012.

¹³³ *Id.*

¹³⁴ FED017914_0001.

¹³⁵ *Id.*

international customers, and 94% with our personal lines customers in North America.”¹³⁶

76. Third, there is benefit from allowing underwriting human capital to be redeployed to higher value activities such as “marketing and selling to these agents and agencies.”¹³⁷ The available human capital is then able to take on other complex manual transactions or focus on higher value transactions.

(3) Profitability Indicator

77. Profitability Indicator is a solution that uses a statistical model to assist underwriters in predicting the future behavior of current and potential customers and to make objective decisions about the potential profitability of a risk based on internal and external factors.¹³⁸ Profitability Indicator assesses the risk of a particular customer, thereby predicting the profitability of a new application or a renewal.¹³⁹ Profitability Indicator calculates a risk score for a particular policy or particular customer, allowing the underwriter to assess the severity of the risk.¹⁴⁰

78. Profitability Indicator functions to provide text displays of guidance messages in CSI eXPRESS to assist underwriters as they move through the process of preparing a quotation for new business.¹⁴¹ For renewals, Profitability Indicator’s risk score may determine that no human intervention is necessary for a given renewal; or, if intervention is required, Profitability Indicator will highlight the sections that require human attention.¹⁴²

79. Profitability Indicator is determining, with precision, the adequacy or the inadequacy of the price for a new application or a policy already on the books and being evaluated for continuation beyond the renewal expiration. Since precision and adequacy of the premium for the exposure is one of the primary goals of the underwriting process, Profitability Indicator contributes to the speed and effectiveness of the renewal process

¹³⁶ FICO0056557 at FICO0056566.

¹³⁷ FICO0057280 at FICO0057284.

¹³⁸ FED000275_0013.

¹³⁹ FED006068_0003; FED005942_0004; Deposition of Henry Mirolyuz, January 11, 2019 49:21-50:1.

¹⁴⁰ Deposition of Henry Mirolyuz, January 11, 2019 50:8-11.

¹⁴¹ FED013479_0008 (indicating Profitability Indicator provides appropriate message to be displayed based on combination of up to 12 data values). *See also* FICO0055485 at FICO0055490 (“The Chubb organization in 2003 demonstrated a new vigor in execution by maintaining underwriting discipline in a heightened competitive environment. Everyone in the Chubb organization is now focused on enhancing the bottom line through disciplined underwriting.”) (Statement of Mr. John D. Finnegan, Chairman, President, and Chief Executive Officer of Chubb Corporation in 2003 Annual Report).

¹⁴² Deposition of Henry Mirolyuz, January 11, 2019 51:5-22.

(through providing input to the ARP application), and allows Chubb to redeploy underwriting time to allow CSR's/Underwriters to "focus more time on marketing and selling to these agents and agencies."¹⁴³

80. Profitability Indicator creates numerous benefits.¹⁴⁴ Profitability Indicator, like ARP, enables Chubb to 1) move more of the right (profitable) business into automated renewal, 2) increase retention on the best accounts and identify less profitable accounts (which could be declined/non-renewed or re-priced to a price that adequately reflects the probability of loss and loss dollars), 3) create greater efficiency for underwriters and agents who will have fewer policies to handle thereby allowing them to pursue the selling of more new policies, 4) allow for easy updating of underwriting rules as business needs change (this is an aspect of speed-to-market).¹⁴⁵ Profitability Indicator allows Chubb to increase the number of policies processed. Profitability Indicator allows Chubb to use a multi-prong approach to enhance revenue and increase profits at the time of renewal.¹⁴⁶

81. Profitability Indicator identifies customers and policies for 1) targeted non-renewals (culling those accounts likely to have claims), 2) focused retention (driving up premium retention for high margin accounts and identifying those accounts it should fight hard to retain), 3) repatriation (win back lost business of those high margin accounts), 4) up sell (identify new premium opportunities by selling more limits to high margin accounts), 5) cross sell (identify high margin accounts to offer new line CSI business opportunities), and 6) right pricing (more conservatively price renewal business with a higher likelihood of future claims experience).¹⁴⁷

82. Profitability Indicator's use of Blaze Advisor contributes to revenue by increasing the speed of response to a request for a quote and the speed of making renewal offers. In addition, Profitability Indicator helps the underwriting process achieve a precise, adequate price, increasing the probability the quote or renewal offer will be accepted. The application also helps the underwriting process identify cross-sell and up-sell opportunities.

¹⁴³ FICO0057280 at FICO0057284.

¹⁴⁴ See FED000275_0013.

¹⁴⁵ *Id.*; see also Deposition of Lawrence Wachs 193:7-25 ("A key architectural element of a rules-based project like Blaze Advisor is that the rules are separated from the application and stored in a nonredundant central mass database, therefore as new products get created, you can now utilize the rules that are sitting in this database for your application without having to continually rewrite those rules and then also to conform that a single rules change, like an interest rate, for example, or risk factor in changing it in one place, in one rule, can then affect all of the applications that are drawing on that one rule change, so your ability to come to market with new products in a new architecture is greatly enhanced.").

¹⁴⁶ See FED010839_0004-5.

¹⁴⁷ *Id.*

(4) **DecisionPoint**

83. DecisionPoint is a market facing quotation application accessed by Chubb agents.¹⁴⁸ As previously stated, the quote, bind, book, issue process for new business is critical to a P&C Insurance company's ability to add revenue (written premium) by selling and writing insurance. This ability to sell new policies is enhanced when the quote is offered at the point-of-sale.¹⁴⁹ DecisionPoint allows Chubb to offer the quote to an agent at the point-of-sale. This influences both speed and ease of doing business. DecisionPoint supports on-line new business submission creation and quote generation for the selected Specialty lines of business (Directors & Officers, Employment Practices Liability, Crime, and Fiduciary).¹⁵⁰ DecisionPoint is for small to middle market Not-For-Profit and Private-Commercial lines of business limited to producers for small business (500 or less employees, up to \$250M revenues).¹⁵¹

84. DecisionPoint provides the following functionality: 1) reserves the risk, 2) determines eligibility, 3) prices the risk, 4) provides an online quote letter including endorsements, 5) completes the application and other documentation, and 6) files all supporting documentation to Commercial Underwriting Workstation (CUW).¹⁵² Blaze Advisor is used for 1) the eligibility determination, 2) pricing, 3) Profitability Indicator, 4) endorsements and data normalization.¹⁵³

85. Chubb's stated Objectives/Benefits from DecisionPoint are:¹⁵⁴

- 1) Obtain real-time, bind-able quote letter;
- 2) Enhance producers' productivity and client service; and
- 3) Responsiveness from Chubb
 - a. Grow capability for NFP (Not for Profit), Private Companies and Health Care Organizations;
 - b. On-line application available whenever needed (i.e., Chubb DecisionPoint is open for business 24 x 7); and
 - c. Support the New Business Service Center.

¹⁴⁸ FED004571; FED009631.

¹⁴⁹ *See, e.g.* FED000143_0002; FED000270_0013.

¹⁵⁰ *Id.*

¹⁵¹ FED005307_0005; FED000294_0002.

¹⁵² FED000294_0002.

¹⁵³ FED000294_0003, 10; FED017914_0001.

¹⁵⁴ FED000252_0006.

86. DecisionPoint creates numerous benefits, which contribute to gross written premiums.¹⁵⁵ DecisionPoint allows the producer to obtain real-time quotes and a bindable quote letter.¹⁵⁶ This enhances the producers' productivity and service to clients.¹⁵⁷ This is a component of the previously mentioned need for speed of response for competitive purposes. In turn, this improves the underwriters' responsiveness to producers and allows underwriters to concentrate on business that requires true underwriting expertise.¹⁵⁸ This is a component of being easy to do business with. Finally, DecisionPoint is devoted to new business resulting in profitable growth.¹⁵⁹ DecisionPoint also allows a user to add coverage to an existing quote (up-sell), thereby 1) enhancing revenue, 2) improving user experience, and 3) allowing the user to complete more of the transaction within the DecisionPoint system without requiring referral.¹⁶⁰

87. Chubb continues to promote DecisionPoint on its website.¹⁶¹

¹⁵⁵ See FED000275_0014.

¹⁵⁶ *Id.*

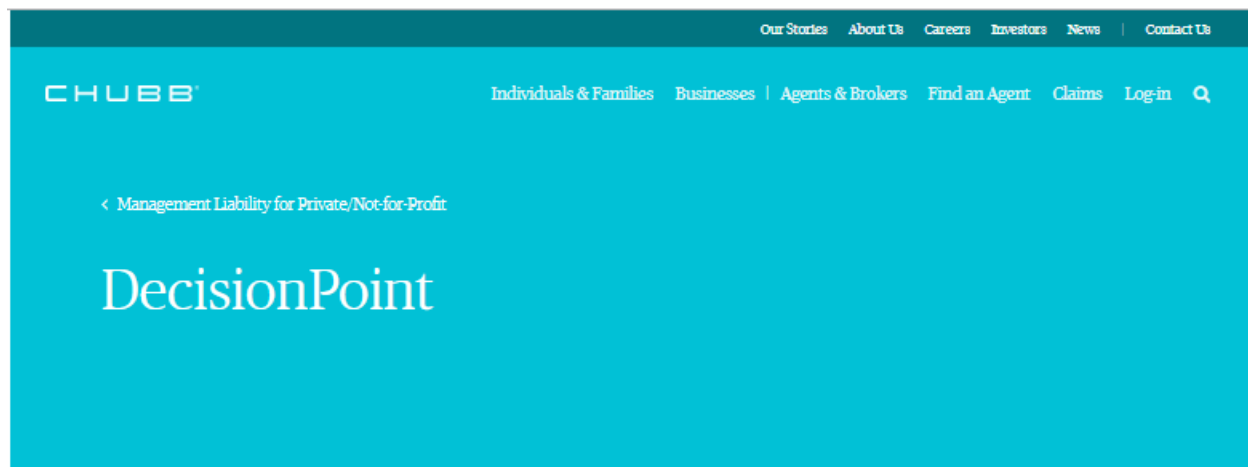
¹⁵⁷ *Id.*

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*

¹⁶⁰ FED006173_0003.

¹⁶¹ "DecisionPoint," <https://www.chubb.com/us-en/business-insurance/chubb-decisionpoint.aspx>.



Professional and management liability lines of insurance are a business imperative for small to mid-sized private companies and not-for-profit organizations - but handling the business, from quote to submission, can be time consuming for underwriters and producers. With DecisionPoint, Chubb makes it easy for you to quickly respond to your clients' questions and exceed their expectations.

Highlights

Benefits

- Streamlined, intuitive online application enables you to:
 - Enter insurance submissions for Chubb's professional and management liability coverages in less than five minutes
 - Obtain a real time quote letter that contains helpful marketing information and a completed application ready for signature
 - Submit a request to bind through our New Business Service team
- Quickly and efficiently quote the following Chubb policies for Private Company and Not-for-Profit accounts:
 - Crime
 - Directors & Officers Liability
 - Employment Practices Liability
 - Fiduciary Liability
 - Miscellaneous Professional Liability (private companies only)

88. DecisionPoint, using Blaze Advisor, contributes to revenue by increasing the speed of response to a request for a quote. In addition, it helps the underwriting process achieve a precise, adequate price, increasing the probability the quote will be accepted. This results in an increased quote conversion rate. The application also helps with ease of use for agents and brokers through better data capture and use of third-party data sources. This, in turn, reduces the need to ask the applicant for more data and improves the cost of doing business and the accuracy of data used in the underwriting process, which, in turn, results in a more precise, adequate premium calculation.

89. DecisionPoint improves availability of the underwriting associates for the agents due to the application having provided a bound quote letter thus reducing the amount of time an underwriting associate needs to spend in the booking and issuance parts of the quote, bind, book, issue process. A reduction in time required for the quote, bind, book, issue process allows Chubb to redeploy this underwriting time to other activities such as cross-sell and up-sell. And the reduction in time opens the opportunity for the underwriting associates to absorb more transactional work without a concomitant increase in human capital needs.

90. DecisionPoint also improves Chubb's product agility and business control. Chubb is positioned to respond rapidly to regulatory requirements for the product suite and to execute the periodic product review and update process each insurance company uses to keep all products' rates, rules, and forms both competitive and compliant.

(5) CIS Claims

91. CIS Claims is a claim system for the specialty line of business.¹⁶² The solution is used to assess the claim severity relative to the issued policy.¹⁶³ This severity determination is reported to the actuarial groups to get insight as to claims paid out from policies issued in CSI eXPRESS.¹⁶⁴ Claims dollars paid out is part of the severity component of cost of raw materials. The CIS Claims application allows a hindsight analysis of the adequacy or inadequacy of charged policy premium on an individual policy basis. This contributes to the ability of the Chubb underwriting process to better price, in the future, applications or policies with similar ratable characteristics.

92. CIS Claims, using Blaze Advisor, contributes to revenue by informing Chubb's actuarial staff of limitations and weaknesses of its current rule set. Chubb's actuarial staff can then modify the rules to better price new policies and renewals. Underwriting associates achieve a better understanding of the precise, adequate premium for a set of application characteristics based on a "hind-sight" analysis. This contributes to revenue by quoting precise, adequate premiums, which increases the probability the

¹⁶² FED009631.

¹⁶³ Deposition of Henry Mirolyuz, January 11, 2019 59:9-11.

¹⁶⁴ *Id.* 59:12-25.

quote offer or renewal offer will be accepted. The underwriting staff may use the CIS Claims output to revise underwriting rules found in other applications (e.g. CSI eXPRESS, ARP, Profitability Indicator).¹⁶⁵

(6) **Exari**

93. Exari was developed to be a document authoring application that combines a rules engine with a dynamic interview user interface and a document generator.¹⁶⁶ It was intended to be an additional data collection source following EZER's initial data collection.¹⁶⁷ This iterative data collection would reduce the underwriter's time and effort.¹⁶⁸ Chubb canceled the Exari project at or around January 27, 2016, the time of the ACE-Chubb merger.¹⁶⁹ Prior to cancellation of the Exari project, Chubb's International Enterprise Architect, Mr. Peter Tribulski, stated the intent to "harvest EZER business rules into the Blaze Rules Engine."¹⁷⁰

94. Exari was intended to contribute to revenue by improving the accuracy of data used in the underwriting process leading to a more precise, adequate premium offer.¹⁷¹ Exari was intended to leverage the functionality of EZER by providing it with the best possible information to price policies. This would have further contributed to revenue by quoting precise, adequate premiums, which increases the probability the quote offer will be accepted.

(7) **Broker Site**

95. Broker Site is a portal to allow brokers access to information and documents to better serve their clients.¹⁷² Such information includes billing and claims information as well as a full reference library of contract guides, rates and rules, product highlights, marketing catalogue, training and webcasts.¹⁷³ Broker Site interfaces with and draws information from the Evolution policy administration system.¹⁷⁴ Broker Site is execution of a tactic within the speed of response and ease of doing business strategies. It allows broker personnel to quickly access and view data about a policy that is in that broker's sphere of influence. Being able to quickly answer questions for the policyholder about parameters of that policyholder's insurance coverage leads to increased customer

¹⁶⁵ Deposition of Henry Mirolyuz, January 11, 2019 60:17-21.

¹⁶⁶ FED003261; FED004100_0001.

¹⁶⁷ FED008352_0001.

¹⁶⁸ *Id.*

¹⁶⁹ FED017913_0001-2.

¹⁷⁰ FED004100_0001.

¹⁷¹ FED008352_0001.

¹⁷² FED004571; Deposition of Henry Mirolyuz, January 11, 2019 72:1-4.

¹⁷³ FED004571.

¹⁷⁴ Deposition of Henry Mirolyuz, January 11, 2019 72:12-73:7.

satisfaction and improves the probability of the policyholder accepting future offers to renew.

96. Broker Site stores all the information for the agent or broker contributing to the ease of use of Evolution. Broker Site helps to reduce the amount of time spent looking for submitted information or spent asking the applicant for additional information. This in turn contributes to revenue by improving the speed of response to quote requests, which also contributes to an increased quote conversion rate.

97. Broker Site, using Blaze Advisor, contributes to revenue by improving the ease of use for agents and brokers through making data about existing policyholders' policies available to the agent or broker.

98. Broker Site also improves availability of the underwriting associates for the agents or broker due to the application greatly reducing the amount of questions from a policyholder for which the agent or broker must call an underwriting or customer service associate for an answer. This reduction in inbound telephone calls from agents and brokers allows Chubb to redeploy this underwriting time to other activities such as marketing and selling.

VIII. APPENDICES

99. The following discussions of the insurance industry, strategies for growth in the insurance industry, role of software and technology in the insurance industry, and the parties provide a further and deeper understanding of how Chubb's use of Blaze Advisor contributes to gross written premium.

A. APPENDIX 1: OVERVIEW OF INSURANCE INDUSTRY

100. For a consumer, P&C insurance (both personal and commercial) is easily described as “a promise to pay” for significant financial loss in the future in exchange for “premium paid today”. P&C insurance industry associates would modify that description to “a promise to pay” for significant financial loss in the future based on a description of covered exposures, a series of coverage grants, and a series of coverage and contractual restrictions in return for “premium paid today”.¹⁷⁵ (And yes, the cost of the insurance policy, called premium, can be spread across a payment plan but for simplicity, I keep premium paid through payment plans within the definition of “premium paid today”).

101. From a business management perspective, insurance is a complicated product. It is one of the few products customers purchase where the actual cost of the raw materials used to build the product is not known until well after the customers purchase the product. Thus, it is incumbent on the insurance company to excel at predicting the cost of its raw materials with significant precision. Insurance companies use a combination of underwriters, product managers, and actuaries to establish the precise predicted, needed price point(s).

102. The table that follows provides a simple comparison of general business pricing versus P&C insurance pricing.

Table 1

	<u>General Business</u>		<u>P&C Insurance</u>
	Cost of Raw Materials		Incurred Losses (claims dollars, paid and reserves)
+	Cost of Manufacturing	+	U/W, Claims, Product, Actuarial, IT, Legal, Loss Control
+	Cost of Administration/Service	+	Executive, HR, Finance, Admin, Customer Service
+	Cost of Sales	+	Marketing Promotion, Agents/Direct, Sales, Advertising

¹⁷⁵ Mark Breeding and Deb Smallwood, “Digital Shift in Insurance: The New Age of the Digital Platform,” *Strategy Meets Action*, at 5, July 2019, available at https://assets1.dxc.technology/insurance/downloads/SMA_Digital_Shift_in_Insurance_2018.pdf (“Also, the product is not a physical item but rather a promise to pay in the future or a contract to manage money.”).

+	Cost of Taxes	+	Taxes, Licensing, Fees
+	Load for variability (margin for error)	+	Load for variability (margin for error)
+	Load for profit target	+	Load for profit target
=	Price	=	Price

103. Since the cost of raw materials for an insurance product is not known at the time of sale, insurance companies use actuarial analysis as a part of their pricing process. Actuarial analysis is complicated. It succeeds, however, by relying on the answers to key questions and involves two important insurance concepts, frequency and severity.

104. To explain frequency and severity, I start with a manufacturing pricing process. If you are manufacturing buggy whips, the cost of the leather and other materials is summed and then multiplied by the number of units that raw material is capable of making – cost of the leather and other materials equates to the insurance concept of severity. The number of units equates to the insurance concept of frequency.

105. An insurance company's forecasted frequency is the estimated number of occurrence incidents per population of risks. The P&C insurance industry operates on a statistical/probability principle referred to as the "law of large numbers"; simply put, the larger the size of a population, the more predictable the results of that population. If the risk population is 1,000 and you estimate the frequency is 11%, the number of occurrences is estimated to be 110. Forecasted severity is simply the estimated average claim dollar expenditure per occurrence. If the estimated incidents are 110 and the estimated average final claims dollar expenditure is \$3,000, the cost of the P&C raw materials is \$330,000. The result of the frequency times severity calculation fits into the pricing construct as the cost of raw materials on the P&C Insurance side of Table 1 above. In the P&C insurance industry, this multiplicative product of frequency and severity is called Loss Costs.

(1) **Revenue Streams**

106. P&C insurance companies have two revenue streams. The first revenue stream is from the agreement to issue policies. Prospective policyholders purchase P&C insurance policies through one of three distribution mechanisms or "channels":

- 1) Independent Agents and Brokers;
- 2) Exclusive Agents; and
- 3) Direct Marketing.

107. There are, of course, P&C insurance companies that use more than one distribution mechanism. For the purpose of this report, I focus on the first mechanism, Independent Agents and Brokers as this is Chubb's primary distribution channel.¹⁷⁶ These agents and brokers find potential customers and sell them on the idea of purchasing P&C insurance through the insurance company(ies) with whom the agent or broker is affiliated. The agent or broker then gathers data about the risk, submits an application for the risk to P&C insurance carriers for whom the agent or broker is licensed to sell, and then works with the P&C insurance carriers' Underwriting Departments to try to get the application quoted and the quote accompanied by an offer to issue a policy.

108. The second revenue stream is from investment income. This is the income generated from a company's portfolio of investments purchased using the float on part of the yet to be used collected premiums. Chubb Limited states in its 2016 10-K that "Our insurance and reinsurance operations generate gross revenues from two principal sources: premium and investment income."¹⁷⁷

109. With the 2007/2008 financial crisis and interest rates in the low single digits from 2008 until now, P&C insurance companies increased their emphasis on their underwriting process to increase underwriting return in order to offset the reduction in investment yield. The Chairman, President, & CEO of Chubb Corporation, John D. Finnegan, confirmed this thought process in the 2013 Chubb Annual Report: "If, however, interest rates remain at depressed levels, a further decline in investment income will increase our reliance on underwriting results to achieve our performance targets."¹⁷⁸

110. PricewaterhouseCoopers speaks to the profitability influence of both the investment revenue stream and an expense management strategy in a white paper, published in November 2018, titled "Commercial Insurance Underwriting Strategy: The key to high performance".¹⁷⁹ The white paper states "Underwriting isn't the whole story, of course. Above-average expense management and superior investment returns certainly boost overall performance. But those have not been the key drivers for the IPM Leaders, according to our analysis. Strong underwriting provides the biggest competitive advantage, and we expect it will likely remain the key to steady outperformance in coming years."¹⁸⁰

¹⁷⁶ FED000061_0025.

¹⁷⁷ FICO0056557 at FICO0056641.

¹⁷⁸ FICO0056263 at FICO0056272.

¹⁷⁹ PricewaterhouseCoopers, "Commercial insurance underwriting strategy: The key to high performance," *PwC Financial Services*, November 2018, available at <https://www.pwc.com/us/en/financial-services/publications/assets/pwc-fsi-whitepaper-commercial-insurance-underwriting.pdf>.

¹⁸⁰ *Id.* at 3.

111. Interestingly, in this white paper, PricewaterhouseCoopers also states the following: “Berkshire Hathaway exemplifies the value of attentive portfolio management. It owns GEICO, the high-growth auto insurer that focuses on high-frequency/low-severity risks. It also holds National Indemnity, which insures cargo, garages, and other low frequency/ high- severity risks. Berkshire is eighth in our IPM ranking. Similarly, by acquiring Chubb in 2016, ACE Limited complemented its focus on industrial, commercial, multinational, and upper middle market companies with strength in the small and mid-market segments. The combined firm, known as Chubb, is an IPM Leader.”¹⁸¹

112. The profitability of a P&C insurance company’s underwriting process is measured on a ratio basis and is called the Combined Ratio. A Combined Ratio of less than 100.0 means the company has produced a profit on its underwriting activities. A Combined Ratio of more than 100.0 means the company has produced a loss on its underwriting activities. Please note that there are two Combined Ratios for the P&C insurance industry. The first is the statutory Combined Ratio. This combined ratio is used by all regulators and does not allow accounting adjustments to defer some acquisition expenses over the life of a policy. The second is the GAAP (generally accepted accounting principles) Combined Ratio, which allows for accounting adjustments to defer some acquisition costs to be spread over the life of the policy. When GAAP is used, the deferred acquisition expense is placed on the Balance Sheet as an asset. For purposes of this report, I will use the statutory Combined Ratio as this is what is reported to regulators and to industry data aggregators such as AM Best.

113. In its simplest form, a P&C insurance company’s (Statutory) Combined Ratio is a sum of its:

	Loss Ratio (LR)	Cost of raw materials divided by Earned Premium (the part of premium that really belongs to the insurance company)
+	Loss Adjustment Expense (LAE) Ratio	Manufacturing cost to manage claims handling divided by Earned Premium
+	Other Underwriting Expense Ratio	Manufacturing costs (excluding claims handling) plus Administration and servicing costs plus Sales costs divided by Written Premium
+	Taxes, Licenses, & Fees (T/L/F) Ratio	Taxes, licensing, and fee costs divided by Written Premium

¹⁸¹ *Id.* at 6.

=	Statutory Combined Ratio	Before Policyholder Dividends
+	Policyholder Dividend Ratio	Policyholder Dividend (PHD) payments divided by Earned Premium
=	Statutory Combined Ratio	After PHD

114. Net Investment Income ratio (net investment income divided by earned premium) is added to the Combined Ratio to create an Operating Ratio. If a P&C insurance company has a Combined Ratio of 98.2 and a net investment income ratio of 6.1, the company's Operating Ratio would be 92.1 resulting in an overall return of 7.9 points.

(2) P&C Insurance Industry Market Segments

115. Deborah Smallwood, Founder of Strategy Meets Action (an analyst group focused on the P&C insurance industry) says: "If you've seen one insurance company, you've seen one insurance company." The P&C insurance industry is comprised of more than 2,500 companies that compress into roughly 1,000 groups or what AM Best describes as "groups and unaffiliated single companies". For instance, Travelers Companies, Inc. is comprised of more than 40 individual P&C insurance companies but operates under the umbrella of Travelers, a holding company. Travelers markets itself as one business entity but Travelers, the holding company, is not an insuring entity. All policies written within the Travelers holding company are written by one of the more than 40 specific writing companies within the Travelers holding company's cadre of writing companies. Writing companies are used to house the various market segment products offered within the Travelers umbrella of writing companies. Similarly, Hartford Financial Services Group, Inc. is comprised of 16 individual P&C insurance companies but operates under the umbrella of Hartford Financial Services and markets itself as one business entity.

116. AM Best's report for Chubb US Group of Insurance Companies (AM Best # 000012), as of July 2015 (prior to the ACE acquisition), in the Rating Groups section of the report, lists 28 companies that comprised this entity (Chubb US Group). AM Best's report for Chubb Limited (the combined ACE and Chubb entity, AM Best # 058303) shows 122 companies in Chubb Limited's "Corporate Structure" that now comprises the combined (ACE & Chubb) entity.

117. The P&C insurance industry uses the phrase "line of business" as the technical industry (and regulatory) term for its products. The P&C industry can be broken into three product-oriented market segments: Personal Lines, Commercial Lines, and Specialty Lines. Each of these market segments can be broken into further sub-segments. Below is a list of each of the market segments with that segment's generally recognized lines of business.

1) Personal Lines (with the following lines of business):

Personal Auto

Homeowners

Dwelling Fire

Inland Marine

2) Commercial Lines (with the following sub-segments and respective lines of business):

Commercial Casualty (with the following lines of business);

Commercial Auto

Workers' Compensation

General Liability

Commercial Property (with the following lines of business):

Commercial Fire

Commercial Multi-peril

Marine which can be broken into two sub-product groups

Inland

Ocean (Note: some insurance carriers underwrite the Ocean Marine risk exposures within their definition of Specialty Lines)

3) Specialty Lines:

118. The Specialty Lines market segment is a sophisticated off-shoot of commercial lines. The commercial risk exposures underwritten by an insurance company's Specialty Lines department require a higher level of underwriting expertise than risk underwritten by the Commercial Lines underwriting department. This could be due to the size of the overall risk exposure(s); for example, a local hardware store with two physical locations, a small inventory of product, and two commercial delivery vehicles requires a very different thought process than Walmart or Target with literally thousands of locations, many more and much larger delivery vehicles, and inventory magnitudes larger than the local hardware store. However, the need for increased expertise could be the result of the type of risk exposure(s); for example, a group of physicians, a group of architects and engineers, an aviation manufacturer, and a software

manufacturer each represent very different risk exposures from the local hardware store or the national retailers mentioned above.

119. With this segmentation (Personal lines vs. Commercial lines vs. Specialty lines) in mind, the P&C insurance industry also generally sub-divides these market segments based on the type of customer, the potential level of risk exposure of the customer, and an insurance company's appetite (desire) for accepting risk exposure.

In Personal Lines, companies may sub-segment between:

High risk (sometimes referred to as "non-standard")

Standard risk

Preferred risk

There can be further segmentation based on risk characteristics.¹⁸²

In Commercial Lines, companies may sub-segment between:

Small Commercial

Middle Market

Large Commercial

120. Segmentation in Commercial Lines can be done using policy written premium, number of employees, or some other data point that allows the insurance company to allocate its intellectual capital based on the skills and expertise needed to perform the underwriting process (acquisition of data, evaluation of the risk, and pricing of the risk).

121. In Specialty Lines, the segmentation tends to be focused toward industry served (i.e., aviation vs. energy vs. medical vs. lawyers vs. architects and engineers, etc.).¹⁸³ The snapshot from the Chubb Limited website demonstrates this industry focus (the Chubb website does not differentiate between Commercial Lines and Specialty Lines when it uses this web page graphic).

¹⁸² Chubb, Ltd., the parent corporation of the defendants in this case, focuses on underwriting policies only for high net worth individuals for its Personal Lines of insurance in its United States geographic zone.

¹⁸³ <https://www.chubb.com/us-en/business-insurance>.



122. P&C insurance companies choose the segments, sub-segments, and lines of business they offer and are willing to underwrite based on a combination of their risk appetite and their financial and intellectual capital. P&C Insurance carriers have annual goals for both growth and profit. The industry uses the phrase “profitable growth” to summarize these goals. In reality, this is the goal of almost all businesses, to grow and simultaneously be profitable.

123. P&C insurance companies need to excel at three things to produce the desired profitable growth. First, they must excel at the underwriting process; getting the precise, right price for the exposure is critical. However, the underwriting process must

be tuned to both encourage and facilitate the writing for new policies and the renewing of existing policies. Second, they must excel at the claims process where the actual cost of raw materials is ultimately determined. P&C insurance companies strive to pay the precise, right amount of money for each and every claim. Third, P&C insurance companies must excel at investing, especially in the low interest rate environment of the past decade.

124. Thus, a major question for a P&C insurance company is what means and methods does it use to create underwriting and claims settlement processes that are finely tuned to achieve the right price while simultaneously encouraging and facilitating the writing of new policies and renewal of existing policies.

(3) **Mechanics of the Insurance Industry**

125. The selling of an insurance policy takes place in multiple steps. The first step is the quote and application process. The initial goal of this step is to ensure the Underwriting Department has adequate, accurate information about the risk (the first step of the underwriting process). Once adequate, accurate information is on-hand, the next step is for the underwriters to determine if the risk fits within the company's acceptance parameters for the type of risk (the parameters are sometimes referred to as underwriting guidelines, and a company's willingness to accept risk is referred to as the company's risk appetite). If the risk fits within the underwriting guidelines, the Underwriting Department crafts a proposal which includes proposed contractual (policy) terms and a premium amount. The proposal is sent to the agent or broker. The agent or broker reviews the proposal with the applicant. Depending on the product (type of policy) being sold, these first steps may be iterative with a level of negotiation taking place between the agent or broker, the applicant, and the underwriting function. Once all parties agree to terms, if an agreement is reached, the final steps take place. If the risk does not fit within the company's acceptance parameters, the company will decline to provide coverage and the agent or broker, to the extent the agent or broker is "independent", will look for coverage from a different insurance company. If the terms and/or required premium is too much, the applicant will likely refuse the insurance company's offer of a policy and seek insurance from a different insurance company.

126. If the proposal is acceptable to the agent or broker and the applicant, the policy is "bound." This means the P&C insurance company officially agrees to provide the policy and the applicant pays the required premium. At this point, all five components of a contract are in place:

- 1) an agreement;
- 2) between two or more parties;
- 3) in a legal form;

- 4) for a specific purpose; and
- 5) for consideration.

127. In the final step, the policy is “booked.” This means it becomes an active policy in the P&C insurance company’s portfolio of policies (and data about the policy can be found in the insurance company’s technology system that issued the policy). The policy documents are sent to all interested parties. These steps are sometimes referred to as the “quote, bind, issue process”. This “quote, bind, issue process” take place for new applications for insurance and for renewal of existing policies.

128. It is important to note that for a policy to be “booked,” the P&C insurance company must agree to provide the coverage and the applicant must provide consideration (payment of premium). It is equally important to note that P&C insurance companies do not agree to accept every application for insurance. One of the primary reasons an insurance company does not agree to accept an application is that underwriters do not believe they can achieve an adequate, precise premium for the exposure.

129. For a P&C insurance company, in most cases, the Underwriting Department manages the execution of the company’s underwriting process. This underwriting process is more than just agreeing to accept or decline to insure a risk. Underwriting is a three-step process:

- 1) Ensure there is adequate, accurate information available to properly assess all risk exposures represented by the potential policy;
- 2) Establish the parameters (covered exposures, coverage grants, coverage and contractual restrictions, and precise price) under which the insurance company is willing to accept risk exposure represented in the application and provide a policy; and
- 3) Based on a) and b) above, make the decision to provide a policy for the applicant or a decision to refuse to issue a policy for the applicant. Please note that sometimes a decision is made not to provide a policy.

130. The key goal of the underwriting process is to protect the insurance company’s surplus by making sure the premium charged for the policies is commensurate with the estimated costs of raw materials (claims dollars) plus the other components of the P&C Insurance pricing construct above. The key phrase is “commensurate with”. If an insurance company charges too little for the policies, the insurance company may lose money on its selling and underwriting of product(s). If the insurance company charges too much for the policies, it will likely lose many of those policies to any competitor whose underwriting allows it offer a more favorable price for the policy. Please note that this could be good or bad for the competitor depending on the competitors’ overall

underwriting precision (if the price point is adequate, the policy contributes to profit but if the price point is inadequate, the policy can contribute to a reduction in profit). One key to success in P&C insurance is executing the underwriting process to predict the precise “commensurate with” needed premium (price).

131. The underwriting process is executed somewhat differently based on each insurance company’s business model, organizational structure, and the amount of underwriting expertise required to efficiently and effectively execute the underwriting process. The level of needed expertise is based on the insurance products being sold and underwritten. Because of this recognized need to match underwriting expertise to applications for insurance, P&C insurance companies tend to use an underwriting organizational model that focuses on P&C market segments and offered products.

B. APPENDIX 2: STRATEGIES FOR INSURANCE COMPANY GROWTH

132. P&C insurance companies, like all other companies, seek to grow and increase profitability. There are only five primary ways a company can grow.

- 1) Execute mergers and acquisitions.
- 2) Raise prices while holding on to existing customers (raise price for products purchased by existing customer base while holding onto those customers).
- 3) Find new customers for the company's existing products (e.g., expand geographic or target reach, expand the distribution system (add brokers/agents), or steal a different insurance company's policyholders, usually done at that policyholder's renewal time).
- 4) Sell more existing products to existing customers (e.g., cross-sell or up-sell).
- 5) Introduce new products (expand the company's product suite (i.e., offer more product(s) in the marketplace).

133. Each of these five growth strategies is used within the P&C insurance industry. Technology influences each of these growth strategies, either directly or indirectly.

(1) Strategy #1: "Mergers and acquisitions".

134. This strategy is more available to relatively larger insurance companies vs. relatively smaller insurance companies. ACE Limited used this strategy when it acquired The Chubb Corporation on January 14, 2016 (and subsequently rebranded as Chubb Limited). One of the primary reasons for mergers and acquisitions is to facilitate quick entry into markets the acquiring insuring entity does not serve or does not serve as well as desired. This quick entry strategy could be because of products, human capital expertise, or distribution systems (this is not an exhaustive list, just a few of the more common motivators). Allstate Insurance Company purchased Esurance in October 2007 to, in part, expand its distribution systems to include direct marketing (an execution of strategy #1—mergers and acquisitions—that allowed for use of strategy #3—find new customers for the company's existing products by use of a tactic to expand its distribution system).¹⁸⁴

135. ACE Limited improved its offerings to small to middle market Commercial Insurance customers through acquisition of Chubb. ACE Limited is a dominant player in

¹⁸⁴ "Allstate Closes Acquisition of Esurance and Answer Financial," *Esurance.com*, October 7, 2011, <https://www.esurance.com/company/news/2011-allstate-closes-acquisition-of-esurance-and-answer-financial>.

the large Commercial Lines sub-segment but not a top player in the Commercial Lines small and middle market sub-segments.¹⁸⁵ Chubb Corp. increased focus on these (small and middle market) Commercial Lines sub-segments going back to the early 2000s¹⁸⁶ and, thus, developed an asset that was attractive to ACE Limited in order to expand or improve its product offerings and market sub-segment expertise (this is not a statement regarding the total set of reasons ACE Limited pursued Chubb).

136. Another reason for mergers and acquisitions is the pursuit of economy of scale. This is achieved by squeezing out redundancy from the combined entities to achieve an overall lower cost per transaction and push the increased number of processed transactions (increased from combining the two entities' books of business) through the lower cost per transaction business processes. Chubb Limited evaluated the systems for both entities and choose which to perpetuate and which to shut down ("sunset"¹⁸⁷ or "eliminate"¹⁸⁸).

137. As mentioned above, a highly probable impact of the merger or acquisition strategy is that the merged P&C insurance company, once merged, has redundant software/systems.¹⁸⁹ Redundant software/systems are an indirect impact to growth as redundancy negatively affects the cost of manufacturing the product, which negatively impacts the needed price. P&C insurance companies put great effort into avoiding a "manufacturing cost" that is price/cost prohibitive. Therefore, P&C insurance companies put significant effort into eliminating redundancy in software/systems. Chubb speaks to the avoidance of redundancy as being important even independent of mergers and acquisitions.¹⁹⁰ Although this specifically referenced document speaks to the technologies used by the Chubb Canadian Zone i.e., Evolution, the thought process would hold true across the enterprise; remove as much redundancy as possible.

¹⁸⁵ Jonathan Kandell, "Evan Greenberg's Ace in Chubb Clothing," *Institutional Investor*, January 12, 2016, <https://www.institutionalinvestor.com/article/b14yvvqd6lb64f/evan-greenbergs-ace-in-chubb-clothing> ("ACE has a much larger footprint abroad; in the U.S. the firm is more focused on large corporate accounts and high-net-worth individuals. Chubb also is known for catering to affluent clients but is stronger than ACE in the middle-market companies and personal lines businesses.").

¹⁸⁶ FICO0055485 at FICO55534; FICO0056032 at FICO0056096.

¹⁸⁷ FED0009631 (1st worksheet, column M).

¹⁸⁸ FED004571 (3rd worksheet, column G).

¹⁸⁹ Deposition of Ramesh Pandey, January 22, 2019 113:1-20.

¹⁹⁰ FED001312_0008 ("Too expensive to have system for each vertical AND each horizontal (+ additional dimension of geography/zone/internalization – language, currency) . . . Need ONE system that TRANSFORMS across 3 dimensions (9 variables) – by role of person logging in and by LOB/product type AND BY ZONE . . .").

(2) **Strategy #2: “Raise prices while holding on to existing customers”.**

138. While a P&C insurance company never holds onto 100% of its existing customers, it works very hard to hold onto as many as possible (with the caveat that an existing policy has an adequate price/premium). Since the cost of the components of the raw materials e.g. medical care, building materials (steel, plumbing, roofing, flooring, etc.), motor vehicle repair or replacement, liability payments, etc. constantly increase, P&C insurance companies constantly fine-tune their price levels. Every P&C insurance company measures its change in pricing over various periods; possibly monthly but definitely quarterly, and annually. There are also industry groups that measure the change in pricing by line of business by quarter.

139. For the Personal Lines segment, this process does not involve negotiation between the insurance company and the agent. The price for a given set of ratable characteristics is set through a P&C insurance company’s rate, rules, and forms filed with the various state Departments of Insurance (DOIs). And there is no variability in calculation of the final, offered premium.

140. For the Commercial Lines segment, this process does involve negotiation between the insurance company and the agent. Generally, Commercial Lines rating allows for a step in the rating process called “rate mods” (modifications, both credits and debits) which allows for some variability in determination of the final, offered premium. The amount of rate mods and negotiations can increase with the risk size within the sub-market. There is limited to no negotiation in the small commercial sub-segment. There is more negotiation in the middle commercial sub-segment and even more negotiation in the large commercial sub-segment.

141. For the Specialty Lines segment, there is more negotiation on the rate but, again, this varies by the risk size within the sub-market.

142. The “raising prices while holding onto existing customers” strategy is consistently executed by P&C insurance companies on a regular basis regardless of market segment. But this strategy alone cannot fuel an insurance company’s desire for growth. Thus, P&C insurance companies use several of the five growth strategies.

(3) **Strategy #3: “Find new customers for existing products”.**

143. Generally, there are three tactics used to execute strategy #3:

Tactic A Pursue organic growth

Tactic B Attract (acquire/steal/entice away) other insurance companies’ policyholders

Tactic C Expand geographic or target market reach

144. Strategy 3 Tactic A (pursue organic growth) is to capture organic growth opportunities (new insurable risks entering the insurance marketplace for the first time). However, organic growth in available insurable risks in the U.S.A. cannot completely satisfy a P&C insurance company's appetite for growth. For example, motor vehicle registrations have only increased an average of approximately 2.25% over the past four years. If every insurance company gets an equal share of the increased motor vehicles, on average, the insurance company will generate 2.25% growth from organic opportunity. New home completions represent only approximately 1% of the single family to four family houses; a 1%, on average, growth from year to year. Since organic growth cannot produce adequate growth opportunities, P&C insurance companies focus on a second tactic to execute strategy #3.

145. Strategy 3 Tactic B (attract other insurance companies' policyholders), is to entice (acquire/steal/entice away) existing policies away from competitor insurance companies. This usually happens at the time of a policyholder's renewal or when some event happens that causes the individual or business to seek out a new insurance policy (relocation of a household or business is a prime example).

146. One important aspect of strategy #3 Tactic B (attract (acquire/steal/entice away) other insurance companies' policyholders), is the influence of the agent or broker. Applicants and policyholders are the primary customer of the agent or broker. The agent or broker will not jeopardize the relationship with the customer (the applicant or policyholder) by offering to sell a policy from a P&C insurance company that is slow to respond to requests for quotes, is difficult to do business with, whose remittance processing system is confusing or cumbersome, has an inefficient or ineffective claims adjudication process, or has a price at which the agent or broker cannot close the deal. Thus, technology plays a key role in the relationship between a P&C insurance company, its distribution system, its policyholders, and any prospects.

147. Strategy 3 Tactic C (expand geographic or target market reach), occurs when an insurance company enters a new insurance marketplace or expands its definition of its target customers.

148. Strategy 3 Tactic C (expand geographic or target market reach) works well for smaller P&C insurance companies who have limited reach within the P&C insurance marketplace but desire to increase that reach. For example, if an insurance company writes Commercial Auto products only in the Mid-Atlantic states, it could consider offering Commercial Auto products in the South-Central states. Or if an insurance company writes Commercial products for local hardware stores, it can begin to offer Commercial products for hardware stores with multi-state operations.

149. However, as previously mentioned, the organic growth available in a newly entered market will probably not fuel the entering company's desire for growth. While entering a new geography or targeting a new segment of a market is a viable growth strategy, the reality is that the entering insurance company's need for growth will require use of multiple growth strategies including use of the tactic to entice policyholders away for competitor insurance companies. And as with Strategy #2 (raise prices while holding on to existing customers), technology plays a key role in any P&C insurance company's ability to implement Strategy #3 effectively. In fact, you cannot effectively execute Strategy 3 Tactic C without effective and efficient technology. An industry favorite phrase, "speed-to-market" is the lapse time between deciding and entering a new geography.¹⁹¹

150. ACE Limited increased its target market reach through the acquisition of Chubb. ACE Limited, now Chubb Limited, uses multiple growth strategies, each working in concert with the other.

(4) Strategy #4: "Sell more existing products to existing customers".

151. This strategy is used by every P&C insurance company. The industry has two terms for this strategy: "cross-sell" and "up-sell". "Cross-sell" is when the policyholder has one product (e.g. Commercial Auto) with an insurance company and the agent or broker sells that customer another policy (e.g. Commercial Umbrella). "Up-sell" is when the agent or broker sells an existing policyholder more coverage than originally requested. Higher liability limits, replacement cost loss settlement provisions, or an increased number of "perils insured against" are examples of an "up-sell". The key to effective execution of a "cross sell" or "up-sell" strategy is having the agent or broker recognize that there are additional coverages or products the applicant might need or want. Technology can play a key role in making agents or brokers aware that there are cross-sell opportunities based on data collected in the underwriting process. Chubb Corporation described its intention to create Up-Sell Capabilities through its DecisionPoint application in a May 2015 requirements document. The document, Solution Analysis for DP Unsolicited Indications, states as an "in scope" feature "Provide the ability to offer a high-level indication on coverages not originally selected by the agent".¹⁹²

(5) Strategy #5: "Introduce new products".

152. This strategy is used selectively by P&C insurance companies. New product development requires deployment of existing or acquisition of new intellectual

¹⁹¹ "Speed-to-market" can be applied in other situations where there is a delay between the decision to implement/take a product to market and entering the marketplace (e.g. 1) development of a new product, 2) periodic update of an existing product, etc.).

¹⁹² FED06228_0003.

capital. It also requires a business and a technology foundation that allows prototype products to be designed quickly, tested, modified, re-tested, and ultimately brought to market within cost and timeframe constraints. In an industry somewhat adverse to risk (the industry places great value on predictable risk), the variability experienced in new product development can become difficult to absorb. But it can be done. It requires high performing human capital, high performing underwriting, high performing marketing, and high performing technology.

C. APPENDIX 3: ROLE OF SOFTWARE AND TECHNOLOGY IN INSURANCE INDUSTRY

153. Making smart data-driven decisions is critical to the way P&C insurance companies do business today. Donald Light, Director, North America Property Casualty practice for Celent. L.L.C., a research and advisory firm focused on financial institutions including insurance companies, says it this way:

“Insurance is a decision business. Competitive success depends on making smarter decisions than the other guy. Traditionally insurers have relied on written procedures, training and hard-coded mainframe programs for consistency, and on actuaries, underwriters and adjusters to make the right decisions. But as change becomes more frequent and decisions more complex, insurers need a better solution.”¹⁹³

154. Stated differently, Mark E. Watson, III, CEO, Argo Group (a Bermuda-based international underwriter of specialty insurance and reinsurance). In the Argo report titled “The Future of Insurance; 2018 Insights: Risks, Uncertainty and a Looming Talent Gap” (page 26, screen shot provided below) states: “The judicious use of cutting-edge technology combined with insurance expertise represents the clear and, for established insurers, successful path to continued growth. Specialty insurance lives at the crossroads of new ideas and new threats.”¹⁹⁴

THE FUTURE OF INSURANCE



“The judicious use of cutting-edge technology combined with insurance expertise represents the clear and, for established insurers, successful path to continued growth. Specialty insurance lives at the crossroads of new ideas and new threats.”

– Mark E. Watson III, CEO, Argo Group



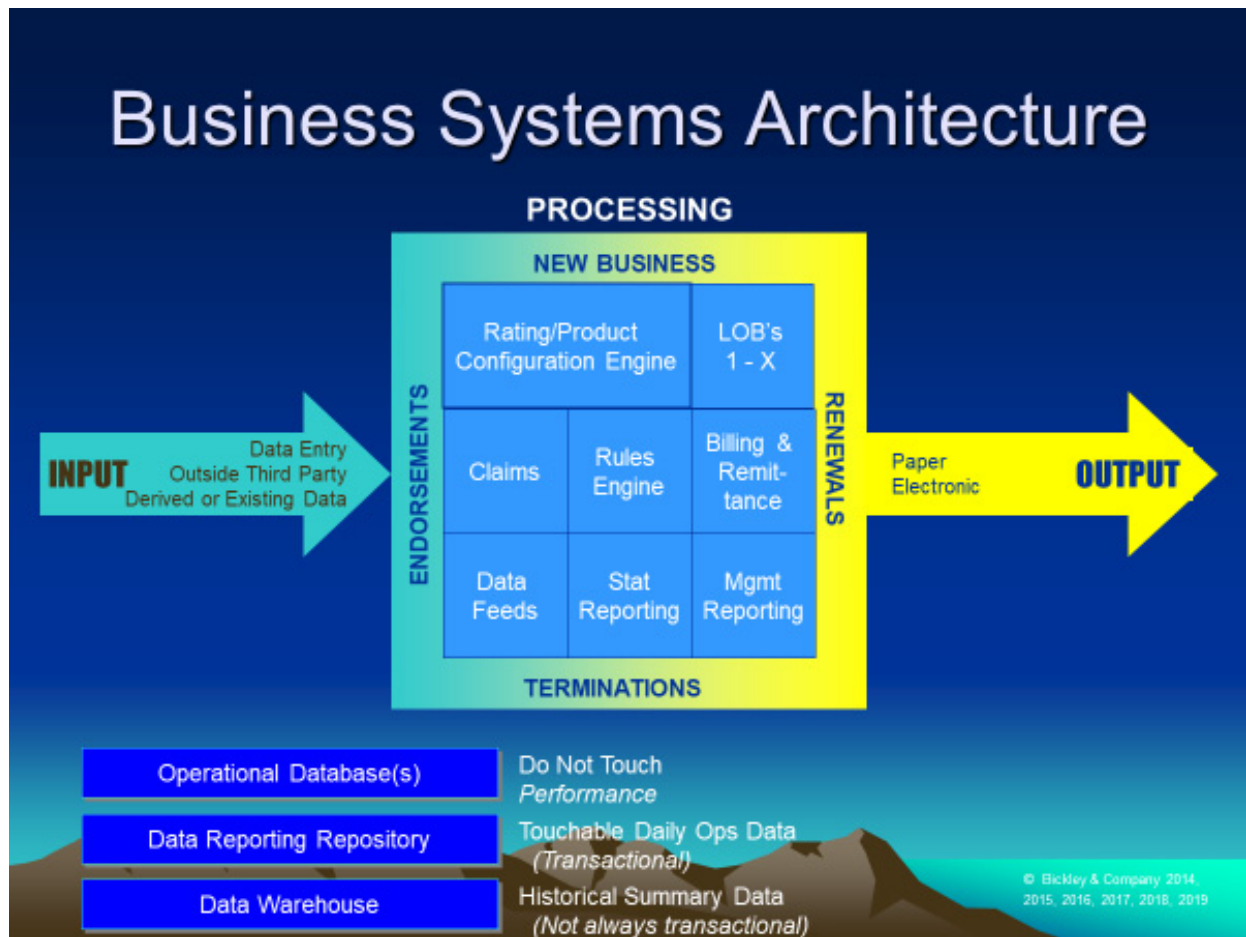
¹⁹³ FICO0057207 at FICO0057208.

¹⁹⁴ Argo Group, “The Future of Insurance; 2018 Insights: Risks, Uncertainty and a Looming Talent Gap,” September 26, 2018, at 26, available at <https://d1hks021254gle.cloudfront.net/wp-content/uploads/2018/09/060-ARGO-MYRP18-8645-Midyear-Full-Report-8.5X11-FINAL-0925.pdf>.

155. A P&C insurance company has four primary systems that drive its business model:

- 1) Policy Administration System (think of it as the engine – nothing happens without this);
- 2) Billing system which I refer to as the remittance processing system (think of this as the fuel system – no incoming premium, the engine will not run);
- 3) Claims Processing Systems (think of this as the gas and brake pedals, they keep the vehicle running at the prescribed speed limit); and
- 4) Management and Statutory Reporting Systems (think of this as navigational systems).

156. A P&C insurance company has other ancillary systems but these are the four primary systems used to support and manage its underwriting, remittance processing, and claims adjudication processes. Below is a “business systems architecture” diagram I created years ago to help business executives better understand how deployment of technology supports the business and the high-level considerations for transformation from legacy systems to more current technology. It is a business view of the system components needed to sell, manufacture, and service P&C insurance products. Primary system #1 (above), the policy administration system, is represented by the Rating Engine + lines of business + Rules Engine blocks of the diagram. Primary system #2, the Billing system is represented by the Billing & Remittance block. Primary system #3, the Claims Processing System is represented by the Claims Box. Primary system #4, the Management and Statutory Reporting system is represented by the Data Feeds and Stat Reporting & Mgmt Reporting boxes. Efficiency and effectiveness of these processes (and, thus, these systems) is critical.



157. With these four systems in place and effective, a P&C insurance company is poised to pursue “profitable growth”. And each of these four components of the business model require support of technology and, as stated above, offer opportunity for deployment of business rules and decision management software.

158. Deployment of technology is key for any P&C insurance company to: a) drive growth; b) reduce expenses (manufacturing and servicing costs); c), increase profitability; and d) navigate a complex, regulated, and a very competitive insurance marketplace. Technology and software are a P&C company’s primary machinery for the manufacturing of its products. P&C insurance companies rely on a combination of technology and intellectual capital to achieve growth. As stated in a *Guidewire* article titled “Underwriting is Changing, but It’s Here to Stay”, Author Nicole Mongillo Guidewire Product Marketing Manager, writes: “However, as time marches on, it’s becoming quite clear that what’s needed for accurate, efficient underwriting is more

complex than either human or machine. It's a combination of both."¹⁹⁵ (snapshot provided below)

When underwriting workbench software and underwriting functionality in policy administration software first appeared in the marketplace, there was an understandable concern that underwriters would be automated out of a job. "Robot underwriters," "automated underwriting," and similar terms were common at that time. However, as time marches on, it's becoming quite clear that what's needed for accurate, efficient underwriting is more complex than either human or machine. It's a combination of both.

So how should machines help drive productivity in this ever-changing environment? In short, they should do whatever they can for their human counterparts! Technology can help underwriters not only by automating tasks but by making it easy for underwriters to access the people and data they need to assess complex risks. Guidewire Underwriting Management™ is a perfect example of purpose-built technology that makes the most of human-machine collaboration.

Let's take a look at a few ways in which this happens.

Task Automation

By providing automation, Underwriting Management takes time-consuming tasks off the

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159. This observation by Ms. Mongillo is demonstrated in the underwriting process when a business rules management system is used to interrogate data elements from the application and decide whether to order a report for additional data or verification of existing data (e.g., ordering a report of prior claims or ordering geo-data about the physical location of a risk). This additional data collection can be done before an underwriter ever sees the application, saving time in the underwriting process. Additionally, use of a business rules management system also increases the level of objectivity of the data being used to assess an application's risks, which increases the precision of pricing of the risk. Mr. Mark E. Watson, III of Argo Group from the previously mentioned Argo report, "The Future of Insurance; 2018 Insights: Risks, Uncertainty and a Looming Talent Gap", says, "To make underwriting faster, smarter and more accurate, we are now finding ways to leverage artificial intelligence, while processing vast amounts of new data from sources as varied as sensors, drones, government databases and social media."¹⁹⁶

¹⁹⁵ Nicole Mongillo, "Underwriting is Changing, but It's Here to Stay," *Guidewire*, November 13, 2018, <https://www.guidewire.com/blog/industry-trends/underwriting-changing-its-here-stay>.

¹⁹⁶ Argo Group, "The Future of Insurance; 2018 Insights: Risks, Uncertainty and a Looming Talent Gap," September 26, 2018, at 11, available at <https://d1hks021254gle.cloudfront.net/wp-content/uploads/2018/09/060-ARGO-MYRP18-8645-Midyear-Full-Report-8.5X11-FINAL-0925.pdf>.



“To make underwriting faster, smarter and more accurate, we are now finding ways to leverage artificial intelligence, while processing vast amounts of new data from sources as varied as sensors, drones, government databases and social media.”

– Mark E. Watson III, CEO, Argo Group



160. Today, there is an entire product category of business rules software available for many industries. Within the P&C insurance industry, there are a number of software vendors offering either “Business Rules Management System” (BRMS) or “Decision Management System” (DMS) software. Industry Analyst group, Forrester Research, published a report titled “The New Wave: Digital Decisioning Platforms” in the 4th quarter, 2018. In this report, Forrester Research stated in the “Key Takeaways: section, Forrester’s research uncovered a market in which FICO and Pegasystems are Leaders; Decisions.com and IBM are Strong Performers; TIBCO Software, SAS Institute, Sparkling Logic, and AuraPortal are Contenders; and InRule, Appian, and Red Hat are Challengers.”¹⁹⁷ A snap shot (from the Forrester Research website) provides a glimpse of who Forrester serves and the primary business functions on which they focus follows.

FORRESTER®				Insights	Who We Serve	Our Expertise	What We Offer	Who We Are	Q	Log In	Become A Client
INDUSTRIES		BUSINESS FUNCTIONS									
Banking	Retail	CIO & Information Technology	Digital Business & Experience								
Insurance	Government	CMO & Marketing	Employee Experience								
Wealth Management	High Tech	Customer Experience	Innovation & Strategy								
Health Insurance		Customer Insights & Analytics	Security & Risk								

161. P&C insurance companies use technology to drive growth and increase profitability. Above, I characterized the five strategies a company can use to accomplish growth. In four of these five growth strategies (I exclude strategy #1, mergers and acquisitions), selection of tactics almost always involves use of software and technology.

¹⁹⁷ John R. Rymer and Mike Gualtieri, “The Forrester New Wave™: Digital Decisioning Platforms, Q4 2018,” *Forrester*®, October 17, 2018, *available at* https://www.fico.com/sites/default/files/2018-10/The_Forrester_New_Wave__D.pdf.

P&C insurance companies generally use three tactics when pursuing execution of these four growth strategies.

162. These three tactics are:

- 1) Speed (faster individual policy underwriting, respond before competitors respond, in expanding markets or products, for product modifications or new product introduction, get the implementation done as quickly as possible);
- 2) Ease of doing business (require agents or brokers to provide less data, be clear in underwriting appetite, do not make a mistake with the billing and remittance processing, have efficient and effective claims adjudication, etc.); and
- 3) Price (get a precise, adequate premium for the risk – When doing industry underwriting training I frequently say “I do not want one penny that is not needed but I want every penny that is.”).

163. Speed is greatly influenced by technology in three of the four primary systems. Execution of the underwriting process is done primarily through the policy administration system. Multiple policy administration system components contribute to the speed at which a P&C insurance company’s underwriting process operates. Technology contributes to acquiring adequate, accurate data faster than humans. Adequate, accurate data allows the underwriters to quickly take one of three actions: a) provide a quote; b) start a negotiation process with the agent or broker to re-engineer the quoted risk to a more acceptable (precise) level of price/exposure; or c) decline the risk (usually because the risk exposure is outside the insurance company’s risk appetite or the attainable price is inadequate for the predicted risk). If an agent or broker submits an application for quote to three P&C insurance companies, the insurance company that responds with a quote first has an advantage over the other two companies.¹⁹⁸

164. The previously mentioned industry advisory group SMA, again in its white paper “Digital Shift in Insurance: The New Digital Platform,” states “At the same time, insurers must address the fact that some products are perceived as commodities (especially P&C personal lines and term life products), which heightens competition and requires lower cost structures to compete effectively. Other areas of the business (P&C commercial lines) are moving toward more specialization with the need to understand the risks and requirements of more fine-grained segments in more detail. All segments of the

¹⁹⁸ Mr. Patrick Sheridan, Associate Partner, Global Insurance Center of Competency, Global Business Services, IBM in a July 2018 blog post stated: “While it is easier to get these various points of data, the process of analyzing the data takes longer and longer. Years of experience show that the longer it takes to process an insurance application, the more likely the company is to lose that prospective customer.” Patrick Sheridan, “Cognitive Technologies are the solution for underwriting,” *IBM*, July 3, 2018, <https://www.ibm.com/blogs/insights-on-business/insurance/cognitive-technologies-solution-underwriting/>.

industry recognize the need for speed and the essential ingredient of innovation for success. All of these developments and advancements will require enhanced or new business capabilities."¹⁹⁹

165. Simply put, speed matters.

166. Technology also plays a role in the “ease of doing business” tactic.²⁰⁰ It is important that insurance companies are easy to work with from the perspective of the individuals with whom they interface. This means putting the agent or broker in the best position to satisfy the purchasing customer (the policyholder or the prospect). In today’s environment where increasing numbers of the U.S.A. population expect almost instantaneous response (‘24 by 7’ service/product/answers), companies of all shapes, sizes, and industries rely on technology to help drive their respective business models to meet these consumer expectations. Prospects expect quick responses to requests for quotes. Policyholders expect quick responses for requests for service (policy changes, billing questions, etc.). Policyholders expect timely offers to renew their policy or notification of the company’s decision not to offer a renewal. Policyholders expect quick response to their notification of a potential claims occurrence (when they report the First Notice of Loss (FNOL)).

167. Technology also plays a role in the price offered by a P&C insurance carrier to a prospective applicant or an existing policyholder being offered a renewal policy. In the policy administration system, the software application(s), once developed and deployed (programmed and implemented), can execute a transaction such as a quote for a new policy much more quickly and accurately than a human or a set of humans can. And, as previously mentioned, software applications can make many decisions without human participation. For example, on Personal Lines, Small Commercial, and Middle Market Commercial risks, technology can make a decision about data and source for the data, start the transaction to acquire said data, receive that data from the source, interrogate the newly acquired data, make another decision about the data (is the data adequate or is more data needed), make another decision (if the software determines adequate data has been acquired) to take an underwriting action (bind the policy) or recognize that it, the technology, is not authorized to make the bind decision and submit the transaction to an underwriter for human participation.

168. Technology can take the acquired data and calculate a proposed premium much faster than a human. Technology can package some of the data and the proposed premium into a quote/proposal and deliver the quote/proposal to an agent or broker faster than a human can. If the quote/proposal is accepted by the policyholder, technology can

¹⁹⁹ Mark Breeding and Deb Smallwood, “Digital Shift in Insurance: The New Age of the Digital Platform,” *Strategy Meets Action*, July 2019, available at https://assets1.dxc.technology/insurance/downloads/SMA_Digital_Shift_in_Insurance_2018.pdf.

²⁰⁰ See, e.g., FED012130_0003; FED012177_0003, 5-6.

bind the new policy, book the new policy, and issue the policy packet, including Declarations Page and any needed invoice (bill), faster than a human. And technology can feed the correct data sets from all the data about the policy to each appropriate downstream system to allow for needed management and statutory reporting and for future service requests such as policy changes (endorsements) or invoicing (billing).

169. Technology will execute each of these steps in the process of selling and underwriting an insurance policy (the quote, bind, book, issue process) the exact same way each and every time;²⁰¹ faster, more accurately, and less costly than if human capital were doing each of these things without technological support. Being able to do transactions more consistently and more accurately is very important.

170. P&C insurance companies rigorously guard the use of the time of their intellectual capital. It takes almost a year to train an underwriter who will be deployed to underwrite less-complex risks and longer to train an underwriter who will be deployed to underwrite more complex risks. P&C insurance companies work hard to train their underwriters, work hard to retain their underwriters, and are very careful about how they use the time of their underwriters. Technology can allow P&C insurance companies to judiciously allocate the time of their underwriting associates to higher value activities while leaving lower value activities to other assets, human or machine, based on characteristics of an underwriting task such as accessing the risk exposures represented by a new application.

171. In a policy administration system, there are four primary transaction streams. You see these four streams in the Scope Definition Diagram above as the outer square that wraps around the boxes defining the components of the four primary systems. The four primary transaction streams are:

- 1) New Business (quote, bind, book, issue process for new business applications);
- 2) Endorsement (modify an existing policy);
- 3) Renew (quote, bind, book, issue process renewal policies); and
- 4) Terminations (ending the coverage provide by the insurance company).

172. When you apply the three tactics of speed, ease of doing business, and price to the four applicable growth strategies, you see how technology helps a P&C insurance company grow and achieve profit.

²⁰¹ For example, a business rules engine will not allow two different underwriters to make different decisions about similar sets of application data (“enforce consistency and compliance across channels and contact points”). See FED000243_0012.

173. In the new business transaction stream, speed contributes to increased opportunity. As previously stated, the P&C insurance carrier who first responds to a request for quote has an advantage. Also, “ease of doing business” contributes to increased quoting opportunity. A P&C insurance carrier who requires less work by its agents or brokers has an advantage. These two tactics (be fast, be easy with whom to do business) should result in a P&C insurance carrier seeing an increase in its number of opportunities to quote. A Business Decision Management technology such as Blaze Advisor opens the way for an increased quoting opportunity by reducing the effort and increasing the speed of response.

174. But the true increase in premium (revenue) does not take place until a quote is accepted and converted to a policy (i.e., is bound and booked). This requires a precise price. If the price needed to close the deal (bind and book the policy) is believed to be inadequate, the underwriting process should lead to a declination to write the risk (there are occasional exceptions to this but exceptions are limited and need to be justified with business reasons). If the price needed to close the deal (bind and book the policy) is more than adequate (higher than needed), the underwriting process will result in an offer to write the policy but the deal may be lost to a competitor P&C insurance company who quotes the risk at only an adequate (and thereby lower) premium.

175. Precision in pricing is a key to success in writing new business, renewing the right policies, and not renewing policies that have an inadequate premium for the risk exposure. The function of the underwriting process is, in part, to achieve an adequate premium for the risk or to decline to write that risk. Technology can achieve a more precise, adequate premium. The more precise the quoted premium, the greater the impact on both revenue and loss ratio. Technology can also help more precisely quantify the premium needed for the exposures represented by the risk data (either acquired data or data from the application). Technology can also increase the consistency of decision made in the underwriting process. A Business Decision Management technology such as Blaze Advisor can contribute significantly to the precision of a P&C insurance company’s pricing and to the consistency of a P&C insurance company’s application of its underwriting standards. You see this in a 2007 internal Chubb presentation about Business Rules.²⁰² Slide 5, under “Possible Solutions” shows seven parts of the underwriting process in which a Business Rules Management System (Blaze Advisor) can contribute. These seven include rating and quoting (increasing the precision of the pricing). Also included are risk assessment and eligibility (determining if the risk fits the Chubb risk appetite and, if so, the needed adequate premium).

176. Any P&C insurance company has multiple associates fulfilling the underwriting process. For any one insurance company, the performance of these associates is spread across a range with some executing that process at an excellent level, some at an average level, and some at a below average level. Business Decision

²⁰² FED00068_0005.

Management technology allows an insurance company to replicate the underwriting decision process(es) of those executing at an excellent level, thereby improving decision making overall. This accomplishes two things. It improves the decisions (“cause”) from which “effect” results (more precise pricing and avoidance of risks with a probability of loss greater than projected loss costs).

177. Chubb Corporation speaks to this when it states: “Enforce consistency and compliance across channels and contact points.”²⁰³ Guidewire speaks to this in an article published in *Property Casualty 360°* titled “Why Underwriting isn’t dead” where author Ms. Nicole Mongillo states “Given these forces in insurance and throughout the modern world, carriers are faced with a conundrum: How do they continue to build on the deep experience created in more traditional underwriter role hierarchies while working within the fast-moving, data-centric, technology-driven framework that the entire world is converting to? One way is by building the senior underwriter’s experience into models — building underwriting rules into a system to turn expertise into a process. That process then can, and will, evolve over time, often with input from ongoing human experience and analysis.”²⁰⁴

178. Automation of high-quality decision-making, such as with Blaze Advisor accomplishes two things: (1) an increased number of excellent decisions (2) without an increased investment in human capital.

²⁰³ FED000243_0012.

²⁰⁴ Nicole Mongillo, “Thy Underwriting Isn’t Dead,” *Property Casualty 360°*, April 13, 2017, available at <https://www.guidewire.com/sites/default/files/media/pdfs/news/2018/20180413-Property-Casualty-360-why-underwriting-isnt-dead.pdf>.

D. APPENDIX 4: RESUME OF R. BICKLEY (BICK) WHITENER

R. BICKLEY (Bick) WHITENER
769 Love Branch Road, Harvest, AL 35749
bick@bickleyandcompany.com
(602) 516-0341 Cellular

SUMMARY

An executive with extensive experience in the Property and Casualty (P&C) insurance industry with expertise in planning, product (development, pricing, and management), technology (budgeting, business management, and deployment), marketing, underwriting, and operations.

PROFESSIONAL EXPERIENCE

Bickley & Company, L.L. C.

2014 – present

Principal

Responsible for implementing the company's goal to help P&C Insurance carriers and companies serving those carriers implement their strategic and tactical plans. To date, the following clients and service have been:

- Client 1, retired – Provided Business Systems Architecture support to improve the functionality and marketability of a Policy Admin, Billing, Claims, and Management Information suite brought over from Europe;
- Client 2, retired – Assisted owners in starting and brining a new MGA operational;
- Client 3, retired – Assisted in assessing the future technology and operational needs of a P&C carrier;
- Client 4, retired – Redesigned and implemented an upgraded Forms Management process for a P&C carrier;
- Client 5, active – Providing expert witness in legal action between a software/information company and a P&C carrier.

Discoverture Solutions, L.L.C., a leading technology services organization focused on delivering quality technology services and support to P&C insurance companies.

2009 – 2013

Vice President of Marketing, 2010

Responsible for creation and execution of the focused marketing strategy for domestic and international P&C markets.

- Led the design and implementation of a marketing strategy aimed at Tier 2 P&C carriers, resulting in a 48% revenue growth in past two and a half years.
- Led the design and implementation of a refurbishment of the company web site to align with the marketing focus, resulting in better understanding of the company by capital markets.
- Supported the Sales Division in closing of deals that resulted in a 28% growth in the active client base over the past two and a half years.

R. BICKLEY WHITENER

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Director of Insurance Technology, 2009

Responsible for client support, product development, and marketing consulting for domestic and international markets.

- Provided product evaluation and development guidance for a strategic partner resulting in the partner recommending Discoverture to do the implementation services for a large customer; a multi-million dollar deal we successfully closed.
- Created a contracting process and contract templates that allowed Discoverture to improve the quality and business acumen of its contracts and agreements, resulting in better service and contract execution.

Unitrin Specialty Insurance Company, a subsidiary of Unitrin, Inc., 2005 - 2009
a leading niche specialty financial services organization.

Director and General Manager, State Management, 2005

Responsible for executive leadership of the Mid-West region (seven states) for product and sales.

- Initiated a customer-oriented business model to focus region associates on identifying and meeting customer needs, resulting in growing the region 8% during the soft market cycle.
- Implemented a new multivariate rated credit product.

American Reliable Insurance Company, a subsidiary of Assurant, Inc., 2004 - 2005
a leading niche specialty financial services organization.

Director, Project Management, 2004

Responsible for organizing and leading the business team accountable for implementing a new, state of the art insurance processing and administration system.

- Trained 25 business associates from various functional areas to write business requirements resulting in completed business requirements for the personal watercraft product, data, and operational functions.
- Led the design and documentation of the business system architecture for the policy administration functions of the new system.
- Implemented program and project management practices as part of the launch of the new systems project.
- Rate, quote, bind, issue, endorse, renew, and bill functions were in user acceptance test for one product when recruited to become a GM at Unitrin Specialty.

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National Flood Services, Inc., a subsidiary of Fiserv, Inc., a leading financial services and insurance business process outsourcing organization. 2002 - 2003

Vice President, Homeowners, 2002

Responsible for stabilizing and rebuilding a Homeowners business process outsourcing product line.

- Designed and implemented a product plan for Homeowners including a business model, value proposition, operations plan, and marketing plan resulting in a customer value gap analysis and identified focus points for priority attention.
- Implemented a priority management system to direct the use of technology resources resulting in completion of 15 priority projects in 8 months and an improved level of customer satisfaction.

Atlanta Casualty Companies, a leading non-standard personal automobile insurance company licensed in 38 states; a subsidiary of American Financial Group, a \$4 billion insurance organization. 1998-2002

Assistant Vice-President, 2000

Responsible for leading an executive team that redesigned the company's strategic plan, state portfolio, business model, and management control process in a drive to improve profitability.

- Designed and implemented a profitability improvement program which included increased focus on the product in core states, increased pricing initiatives, and increased emphasis on expense control. This resulted in an increase in the number of rate revisions implemented by 115% and achieved a +34% written rate impact in 18 months.
- As a result, the accident quarter loss ratio decreased 19.9 points and the company achieved a calendar year combined ratio of 99.2 for the 1st quarter of 2002.

Product Manager, Team Leader, 1998

Responsible for the overall strategy and performance of the states of AL and TN with a portfolio of approximately \$50 million net written premium.

- Led the design and implementation of a quality improvement initiative that resulted in a reduction of the software re-mail rate from 66% to approximately 5%.
- Led the project management of introduction of a new credit point of sale agency interface and rating software. The software was a finalist at the 1999 Microsoft Comdex Convention.

American Red Cross – Blood Services, Alabama Region 1997-1998
A leading blood banking organization producing blood and transfusion medicine products.

Director of Donor Services, 1997

Responsible for the recruitment of donors (sales) and collection of whole blood and Apheresis products (collections operations) in the northern half of the state of Alabama.

- Led the design and implementation of a sales and marketing model that resulted in a 12% increase in collections over the previous fiscal year.

R. BICKLEY WHITENER

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Prudential Property & Casualty Insurance Company
One of the 10 largest insurance companies in the country.

1996-1997

Director of Information Systems, 1996

Responsible for business leadership and program management of a major transformation effort.

- Led a multi-functional team on an analysis to determine if a vendor package could meet the needs of the business.

Equifax, Inc.

1993-1995

A leading supplier of risk-based consumer information to the insurance and financial industries with annual sales in excess of \$1.4 billion.

Assistant Vice-President - Marketing, 1993

Responsible for marketing and sales support for underwriting information services and products distributed to the personal lines property underwriting industry.

- Led the design and implementation of a property marketing strategy that resulted in \$3 million additional annual sales and \$1.2 million in additional incremental profit.

Hartford Insurance Group

1977-1993

One of the twenty largest insurance companies in the USA.

Business Systems Administrator, 1993

Responsible for stabilizing the pc based local area network for policy processing and for administering the Charlotte, NC Personal Insurance Center's systems (telephone and processing).

Agency Services Manager, 1992

Responsible for all service and front line underwriting for 14 southern states. Led the re-engineering of the Charlotte, NC Personal Insurance Center including implementation of a new ACD based telephone system, a new pc based local area network for policy processing, and consolidation of the front line underwriting and customer services functions.

Director of Project Management, 1988

Responsible for the implementation of priority profit improvement initiatives including responsibility for teaching business requirements writing to the business teams.

Director of Product Development and Automation, 1985

Assistant Director, Corporate Planning, 1980

Senior Analyst, Personal Automobile, 1979

Underwriter, 1977

EDUCATION

VIRGINIA COMMONWEALTH UNIVERSITY, Richmond, VA
 B.S. in Education, 1976

E. APPENDIX 5: LIST OF MATERIALS REVIEWED

Document Bates Number	Document Bates Number	Document Bates Number
FED000046_0001	FED003112_0001	FED007235_0001
FED000061_0001	FED003261_0001	FED007789_0001
FED000064_0001	FED003323_0001	FED007797_0001
FED000065_0001	FED003339_0001	FED007821_0001
FED000068_0001	FED003989_0001	FED007858_0001
FED000112_0001	FED004079_0001	FED008095_0001
FED000122_0001	FED004100_0001	FED008145_0001
FED000127_0001	FED004458_0001	FED008242_0001
FED000127_0001	FED004534_0001	FED008281_0001
FED000141_0001	FED004535_0001	FED008352_0001
FED000143_0001	FED004570_0001	FED008403_0001
FED000152_0001	FED004571_0001	FED008454_0001
FED000171_0001	FED004736_0001	FED008555_0001
FED000185_0001	FED004790_0001	FED008650_0001
FED000190_0001	FED004816_0001	FED008759_0001
FED000195_0001	FED004839_0001	FED008760_0001
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FED000270_0001	FED005190_0001	FED009631_0001
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FED001016_0001	FED006248_0001	FED014158_0001
FED001020_0001	FED006252_0001	FED014390_0001
FED001289_0001	FED006288_0001	FED015545_0001
FED001311_0001	FED006504_0001	FED016469_0001
FED001312_0001	FED006662_0001	FED016590_0001
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FED017176_0001	FICO0002058	FICO0056861
FED017882_0001	FICO0005170	FICO0057181
FED017883_0001	FICO0005292	FICO0057182
FED017884_0001	FICO0005306	FICO0057197
FED017885_0001	FICO0005309	FICO0057199
FED017886_0001	FICO0005313	FICO0057206
FED017895_0001	FICO0005315	FICO0057207
FED017905_0001	FICO0005318	FICO0057223
FED017906_0001	FICO0005328	FICO0057225
FED017912_0001	FICO0005331	FICO0057228
FED017913_0001	FICO0005873	FICO0057232
FED017914_0001	FICO0052649	FICO0057244
	FICO0052797	FICO0057249
	FICO0052933	FICO0057261
	FICO0053076	FICO0057262
	FICO0053225	FICO0057277
	FICO0053372	
	FICO0053522	
	FICO0053663	
	FICO0053812	
	FICO0053960	
	FICO0054092	
	FICO0054228	
	FICO0054369	
	FICO0054512	
	FICO0054654	
	FICO0054952	
	FICO0055172	
	FICO0055401	
	FICO0055485	
	FICO0055612	
	FICO0055743	
	FICO0055883	
	FICO0056032	
	FICO0056183	
	FICO0056199	
	FICO0056215	
	FICO0056231	
	FICO0056247	
	FICO0056263	
	FICO0056279	

Case Documents

Complaint with Exhibits, filed April 21, 2016

Amended Complaint, filed February 1, 2017

Second Amended Complaint, filed September 11, 2018

Discovery:

Federal's Fifth Supplemental Answer to Interrogatory No. 18 dated February 28, 2019

Federal's Fourth Supplemental Response to Interrogatory Nos. 20 dated February 28, 2019

Federal's Fifth Supplemental Answer to Interrogatory No. 19 dated March 2, 2019

Federal's Fourth Supplemental Answer to Interrogatory No. 16 and Fifth Supplemental Answer to Interrogatory No. 17 dated March 2, 2019

Federal's Supplemental Response to FICO's Fourth Set of Requests for Production dated march 4, 2019

Federal's Fifth Supplemental Answer to Rog. No. 16 and Sixth Supplemental Answer to Rog. No. 17 dated March 21, 2019

Federal's Fifth Supplemental Answer to Rog. No. 20 dated March 21, 2019

Federal's Sixth Supplemental Answer to Rog. No. 18 dated March 21, 2019

Deposition Transcripts:

Deposition Transcript of Ben Baer dated January 29, 2019

Deposition Transcript of Chris Ivey dated March 14, 2019

Deposition Transcript of Henry Mirolyuz dated July 31, 2018

Deposition Transcript of Henry Mirolyuz dated January 11, 2019

Deposition Transcript of Lawrence Wachs dated February 26, 2019

Dated: April 19, 2019



R. Bickley Whitener
Principal
Bickley & Company, L.L.C.
769 Love Branch Road
Harvest, AL 35749